COMMERCE AMERICA
FORMERLY COMMERCE TODAY

U.S. Department of Commerce / March 29, 1976

The Acceleration of INTERNATIONAL TECHNOLOGY TRANSFER

Newsmemo

Shrinkage in number of U.S. auto dealers is a long-term trend. When 527 outlets left the field in 1975 it was the 20th successive year of declines. The U.S. had 41,018 dealers in 1956, compared to the present total of 24,453. These figures suggest that although the recession has increased the degree of auto dealer decline, the reduction itself is part of a longer-range movement toward larger, better-equipped consolidated outlets.

New York port maintained its lead in ship arrivals in 1975. Its total of 7,832 was a decline from the 1974 total of 8,375, but still represented a long lead over the Los Angeles-Long Beach report of 4,804 arrivals. Other major port totals were: New Orleans, 4,700; Philadelphia, 4,675; Houston, 4,591; Hampton Roads, 4,090; Baltimore, 4,033; San Francisco, 3,689; Portland-Columbia River, 3,204, and Seattle, 2,038 arrivals. The ten ports had a year's gain of 251 arrivals.

The American Bicentennial is going abroad to customers of the world's great department stores. From May through October special promotions will put Americana in the windows, facades and aisles of such stores as David Jones in Australia, Kendal Milne and Jenners in Britain, Oy Stockmanns in Finland, and at least 30 chains in Japan. Suppliers interested in these Commerce-supported merchandising events can get full details from Mollie Cleveland in the Special Activities division of the Office of International Marketing, 202-967-4705.

ESSA-8 has been turned off after seven years of sending weather pictures from 900 miles out into space. The satellite was shut down this month when its back-up camera failed; the primary camera had stopped operating late in 1974. ESSA-8 pictures, in addition to being used for meteorological purposes by about 120 nations, also were received by hundreds of non-governmental organizations and individuals, including schools, scientific groups, Boy Scout troops and amateurs who enjoyed receiving pictures from outer space. Now the source is NOAA-4, a newer spacecraft that provides both day and night global coverage and uses a scanning radiometer system rather than a TV-type camera.

The spotlight on the Geneva trade talks is being turned up. This magazine carries a "Multilateral Trade Negotiations" section as a regular monthly service. Now the Chamber of Commerce of the United States has begun a Trade Negotiation Information Service in conjunction with its Washington Report. The first "overview" bulletin, assessing the progress at Geneva, concludes that "it may be realistically expected that hard bargaining will be tempered by the uncertainties of the forthcoming U.S. Presidential election, leaving much work for 1977."

Volume of world trade was off last year for only the second time since World War II. Preliminary figures from the Geneva headquarters of the General Agreement on Tariffs and Trade show a 6 percent decline in trade volume for 1975. The other recent year of decline was 1958, when the fall amounted to only 1 percent. The GATT Secretariat reports that all of the 1975 decline occurred in the first half of the year, with some growth achieved in the second half.

U.S. marketers will be aiming more and more at the low-number household. Almost one in five of our households today consists of a person living alone, and nearly one in three consists of two persons. Together these small households comprise about half of the 71.1 million U.S. households. A report on the March 1975 Current Population Survey by the Census Bureau shows a dramatic 29 percent increase in one-person households between 1970 and 1975. In contrast, the number of five, six or seven-and-more person households dropped in the same period.

A new Reinsurance and Agency Agreement has been signed by the Eximbank and the Foreign Credit Insurance Association. This affects the export credit insurance available to the U.S. business community. Under the new agreement, the 54 private insurance company members of FCIA will take significantly more commercial credit risks on every policy underwritten by Eximbank and the association. FCIA will also be given greater authority to issue export credit insurance which Eximbank coinsures and reinsures, in order to improve the speed of service to U.S. exporters and banks.

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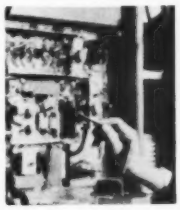

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COVER: Nations of the two hemispheres are meshed in an effort to speed up the flow of advanced technology across borders, particularly for the benefit of the developing countries. Story is on Page 9.

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Rise Expected In Capital Outlays —But Timing Uncertain

Economic Highlights is prepared by Maynard Comiez, Acting Chief Economist for the Department of Commerce.

A recent survey of business anticipations for capital spending indicated a jump of 6 percent in such outlays from the fourth quarter of 1975 to the first quarter of 1976. Even after allowing for rising prices, an increase of this magnitude would provide a strong lift to the economy as it moves through the fourth quarter of recovery from the 1973-1975 recession. While conditions are favorable for an increase in business spending on new plant and equipment, evidence suggests that the rise will be only modest in the current quarter and that stronger gains are likely to occur later in the year.

The quarterly surveys of business investment plans, by the Commerce Department's Bureau of Economic Analysis (BEA), have been fairly accurate over the years but recent experience suggests that plans for an increase in spending in a given quarter are frequently delayed by at least one quarter. One reason, perhaps, is simply the inability to keep large, complex business projects on schedule.

Other statistical data provide a mixed picture of capital spending in this quarter. Contracts and orders for new plant and equipment, a precursor of fixed investment spending, moved erratically in the last few months of 1975. This series rose in January, however, to a point 11 percent above the monthly average of the previous quarter. Average nondefense capital goods orders in January and February 1976, another leading indicator of capital outlays, rose only about 2 percent above the average for 1975. But the index of construction contracts in January of this year was about 22 percent higher than the fourth quarter average. Thus, it seems likely that business fixed investment will show only a modest increase in the first quarter, with stronger gains in subsequent quarters.

The BEA survey asks respondents about their anticipated spending for the current and subsequent quarters. The expectations for the subsequent quarter are called "first anticipations" and those for the current quarter are entitled "second anticipations." The error between "second anticipations" and actual capital spending was 1.9 percent for all 64 quarters starting in 1960 and ending with 1975. The range of error was from +5.4 to −3.7 percent Actual expenditures were overestimated 70 percent of the time (in 46 of 64 quarters).

The largest errors occur in the late stages of a recession and the early phases of recovery, as investment plans are altered in the light of economic conditions. The outlay for plant and equipment in 1975, for example, turned out to be about 4 percent below the original estimate taken from a survey made in late 1974. Business executives steadily cut back their investment plans during the year. If 1976 follows a typical recovery pattern, investment plans will be revised upward as business executives become convinced that the economy will continue to expand.

Price expectations

Investment plans in the BEA survey are stated in current dollars, and the amount of inflation expected by business executives is crucial to interpretation of the estimates of future investment. In a prior survey in late 1975, business executives anticipated a rise of 10 percent this year in prices of plant and equipment. Thus, the latest estimated increase of 6.5 percent in 1976 plant and equipment spending, as compared with 1975, would be a decline in real terms.

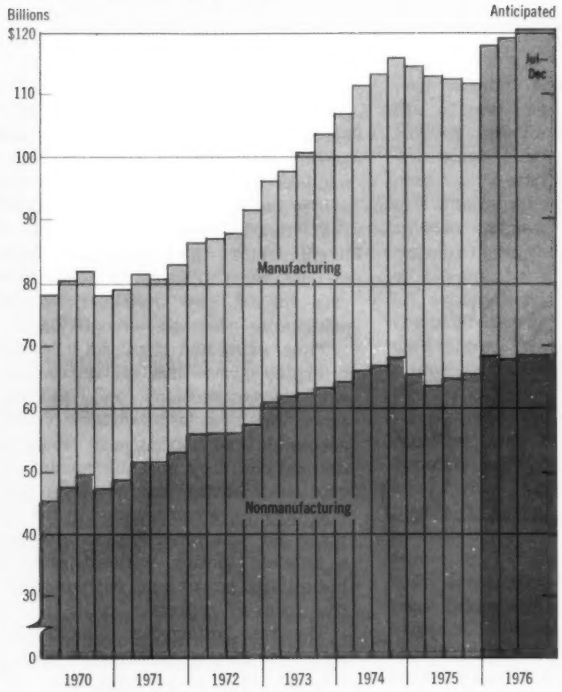
It seems likely that the experience with inflation in 1974 and 1975 led businesses to expect greater inflation of capital goods prices than is likely to occur. The producers' finished goods component of the Wholesale Price Index rose 15 percent from 1974 to 1975; yet, by February of this year this component showed only a 7.3 percent increase over February 1975 and it has been rising at an annual rate of only 4.9 percent since November. Thus, the combination of a modest upward revision in investment plans and slower than anticipated price increases probably will result in an increase, in real terms, in business spending for plant and equipment in 1976.

As shown in the charts, business capital spending in the fourth quarter of 1975, as reported in the BEA survey but expressed in 1972 dollars to strip away the effects of inflation, was lower than the nadir of the previous recession for both manufacturing and nonmanufacturing industries. That is not the case for nonresidential fixed investment, a broader category that includes investment by farmers, professionals, real estate firms, and institutions as well as business capital spending. This category is a component of the national income and product accounts.

Many influences could lead businesses to increase capital spending in the last half of 1976 above the levels anticipated in the latest BEA survey. Total business sales rose substantially in December 1975 and continued strong through February. As a result, the increased cash flow will facilitate the financing of capital investment. Inventories were depleted rapidly in 1975, and it now appears that inventory accumulation has resumed. This will lead to greater acceleration of production. Given a lower rate of inflation, increased internally generated funds, and rising demands on available capacity, actual plant and equipment expenditures in the last half of 1976 are likely to be higher than the BEA survey indicates.

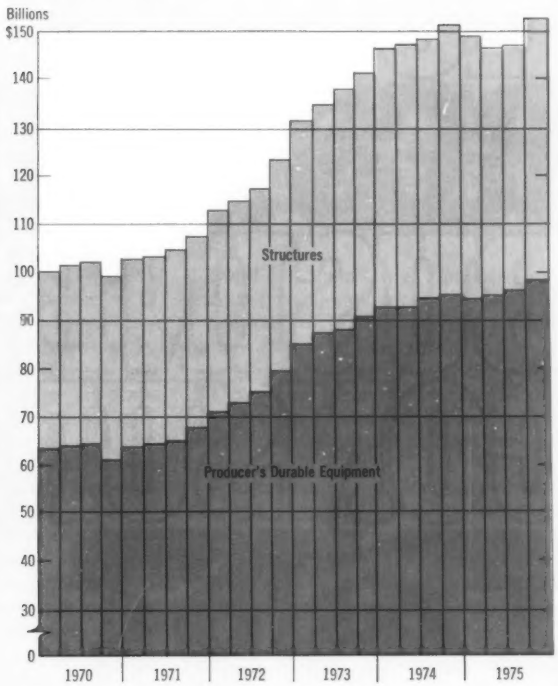
A survey of 1,000 manufacturers conducted by the Conference Board determined that capital appropriations in the fourth quarter of 1975 rose 22 percent above the third quarter level. These appropriations reached a high during the third quarter of 1974 and then declined for four successive quarters. Capital appropriations are projected to be more than 14 percent higher in 1976 than in 1975. The backlog of unspent capital appropriations also rose, and at the beginning of this year they amounted to about $47 billion. Since capital appropriations move well ahead of actual expenditures, capital spending in 1977 should be substantially greater than in 1976.

New Plant and Equipment



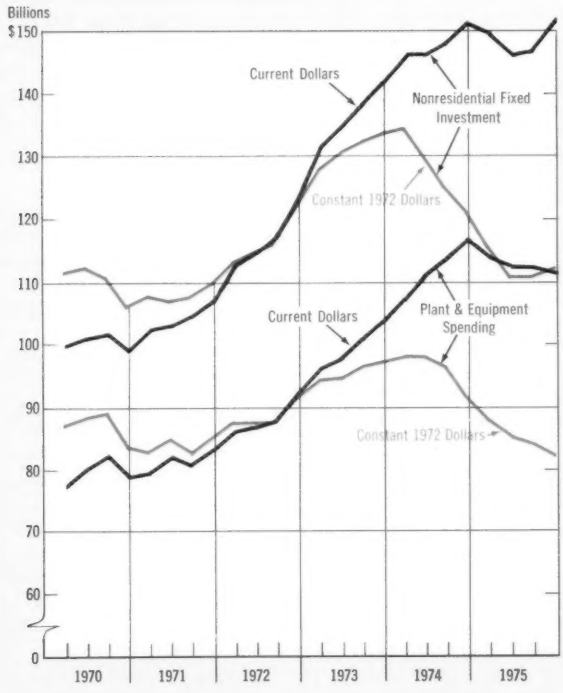
Business spending on new plant and equipment, quarterly surveys by Bureau of Economic Analysis.

Fixed Investment

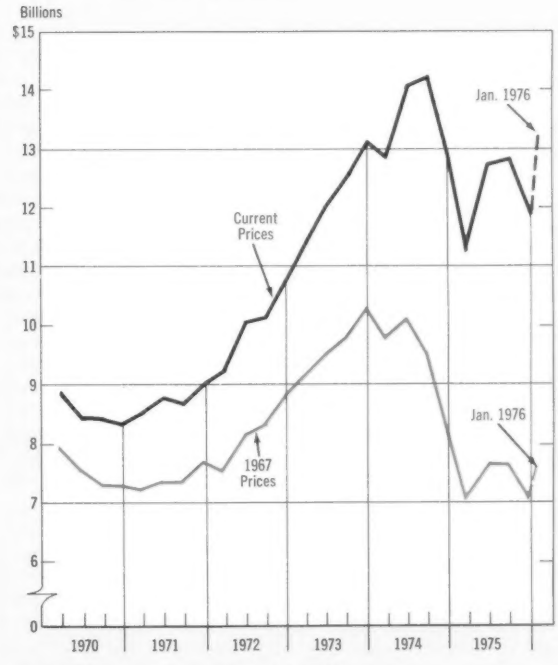


Nonresidential fixed investment component of GNP which includes farm, professional, and institutional investment.

Two Measures of Investment



Contracts and Orders for New Plant and Equipment



Quarterly averages of seasonally adjusted monthly amounts.

HOW TO RESTORE BUSINESS-CONSUMER TRUST

The following article is adapted from an address by Secretary of Commerce Elliot L. Richardson to the Drug, Chemical and Allied Trade Association in New York March 11:

How can it be that we find ourselves in business and government confronted with a consumer revolt in a society dedicated to free enterprise and citizen participation?

The answer is intertwined with the consumer movement—or what used to be called, in a simpler time, the cultivation of satisfied customers. We used to hear a saying, perhaps too many years ago, that "The customer is always right."

So what went wrong?

A little bit of simplified history might be illuminating. In the days of the bazaars, the ruling doctrine was *caveat emptor*—"let the buyer beware"—and with good reason. But the buyer knew the rules of the game, and was well practiced in dealing with the wily vendor. Face-to-face with the merchant, he knew how to—and indeed was expected to—haggle at great length. It was a fair enough bargaining situation, all things considered, and whoever came out on the short end of the stick had only himself to blame—while grudgingly admiring the craftiness of his adversary.

In the time of the craft and merchant guilds, the consumer enjoyed a broader measure of power. Customers found themselves with a wider choice than take-it-or-leave-it; they could compare the quality, service and prices offered by competing vendors. Business therefore found it to its own advantage to attract customers by competing fairly and honestly in the open market; by offering a quality product or service at a reasonable price; and by standing behind what they sold. Business itself, in other words, was its own most effective consumer protection agency.

As mass production and distribution became increasingly more widespread, they changed the fundamental tone and tenor of the vendor/customer relationship. The homegrown products of the pre-industrial age gave way to rapid growth and depersonalizing of business—with a concomitant growth in consumption.

Two new and closely related phenomena also came into play. First, a shift from production solely for people's needs to increasing production to satisfy people's wants and fancies. This pivotal shift marked the real beginnings of the consumer society. And hand-in-hand with that new emphasis arose the second phenomenon: the intentional cultivation of consumer appetites and demands—the creation of new markets, in effect—principally through advertising.

Thus, what had begun as a face-to-face interplay grew into an impersonal network of transactions conducted at a distance. Business became more remote, less accessible and increasingly powerful. The natural corollary was the consumer's perception of having lost whatever power he may once have commanded in the marketplace. He saw himself more and more as a helpless victim, without any genuine bargaining power and without any effective form of redress.

The free enterprise economy and the free democratic government are closely coupled. That relationship is underscored by the fact that when political unrest began to stir in this country in the late 1960s, consumer unrest began to manifest itself as well.

Negative perception about business, reinforced by the fly-by-night and fast-buck operators, have been further reinforced by those giant corporations that have engaged in practices ranging from the highly questionable to the patently illegal.

All of this has brought us to the point of government passing laws and issuing regulations to protect the public—and consumers pounding on the doors, led by men like Ralph Nader.

Business must ask itself: if there had been no attempts to take advantage of consumers—but rather a high-priority focus on consumer interests—would we really have had a need for Truth-in-Packaging, Truth-in-Labeling, and similar laws? These things do not arise spontaneously; they come about because people have felt victimized and turned to government for help.

> Business became more remote, less accessible and increasingly powerful.

The Naders and the other consumer advocates at least have helped focus attention on these problems. In so doing, they have done business a favor by bringing it

back to its fundamental need to be responsive to consumer needs and wants.

Back at the turn of the century, when the antitrust laws were being enacted, President Theodore Roosevelt said:

"We demand that big business give people a square deal; in return we must insist that when anyone engaged in big business honestly endeavors to do right, he shall himself be given a square deal."

> . . . people have felt victimized and turned to the government for help.

It was in search of that square deal—in both directions—that many bureaucracies we now carp at were established. It was done with the best of intentions; but now we find them hard to turn off. Regulations were spawned by the agencies we established; Congress added more laws; the agencies tacked on more regulations; Congress modified them. The process has proliferated until we feel strangled by red tape.

Today business feels hurt. Consumers feel hurt. The trend seems to be accelerating. The question is: what are we going to do about it?

I would suggest that, having progressed from the guild to the feeling of consumer helplessness to the consumer regulatory process, it is now time to make . . .

A New Beginning

The New Beginning, let me admit at the outset, is in reality a return—although in a new perspective, to be sure—to an older way of doing business, when the Customer Was Always Right. But, as the great naturalist John Burroughs remarked, "To find new things, take the path you took yesterday."

Before offering some suggestions as to possible paths business might profitably follow in this regard, I'd like to outline briefly what we in government are doing—and will be doing. More specifically, I want to enunciate what I visualize as the role of the Department of Commerce—and my particular responsibilities as head of that department.

My point of departure is the inescapable fact that American business and the American consumer co-exist in a state of symbiosis. They are but two sides of the same coin. However, the relationship is not precisely reciprocal, since one can conceive of consumers managing to survive without business. To be sure, the life of man would be more as Thomas Hobbes described it three centuries ago: ". . . poor, nasty, brutish and short." But man would survive.

Business, on the other hand, could not survive without the consumer. For that reason, I see the role of the Department of Commerce as being concerned every bit as much with the consumer as with the producer. It is—and must be—a two-way street. So, when the business leaders I have met since coming to this job ask me if I am going to be a strong advocate for business—both in the councils of government and before the public—I can honestly answer that indeed that is precisely what I intend to be. But, that also means to me that I have the same responsibility and accountability to the consumer as I have to business.

In accordance with that principle, we have taken and will be taking a number of steps. As a sampling, we have—under the President's direction—established a new Consumer Affairs Division in the Bureau of Domestic Commerce, and a Secretarial advisory group known as the Consumer Affairs Council.

In addition, a few of the 75 Department of Commerce advisory committees now include consumer representatives in their membership. In order to assure the broadest possible consumer input into departmental decisions, I am directing that, where possible, a consumer representative be added to each of the remaining committees.

Let me turn to the possible approaches that business might undertake. I am certain that some of the more progressive and enlightened firms have already adopted one or more of these proposals. In that respect, a cross-fertilization of ideas among various companies as to which avenues seem to show the most promise could prove to be a most valuable interchange. And I would hope, beyond that, that what I say might lead to some new—and perhaps more enlightened—thinking on the part of all business.

The first step, as I see it, is to cultivate and nourish a new attitude—from the top executive offices of the corporation down through every echelon of the organization.

The essence of that attitude must be affirmative. Business serves itself poorly by adhering to a negative and defensive position every time it is faced with the necessity of change in its responsiveness to the consumer—and to the public in general. I think it's time we face the fact that there is no "they" out there who are out to get business—as long as they can be convinced that business does offer them a square deal. There is no inherent antagonism between business and its customers—unless business asks for it, by sins of either commission or omission.

Building upon that premise, then, why not consider:

- Including a consumer or consumers on the Board of Directors?
- Having a highly placed executive officer whose primary responsibility lies in consumer affairs—as at least one food chain I can think of has done very effectively?
- Establishing a Consumer Affairs Division, reporting directly to the top levels of the corporation?
- Holding a regular series of frank meetings with consumer advocacy organizations—and listening, really listening—to what they have to say?
- Instituting a series of consumer forums—in all places of business and throughout the country—where, again, the objective is to listen and learn?
- Going one step further than the market surveys which business does so well—by seeking out consumers as individuals and as groups? This is an excellent way of getting invaluable feedback.

> The consumer movement will not go away, unless business eradicates the root causes.

Instead of merely trying to find out what people will buy, find out what they think of a business and the way in which it responds to their needs and wants. If there is legitimate dissatisfaction, this is the place to find out why. And it is also an excellent forum in which to explain, face-to-face, what a company's problems are and how it is going about resolving them with a view toward better responsiveness to consumer needs.

The bottom line, of course, is that the consumer movement as we know it today arose not by spontaneous generation, but because there was a pervasive, growing and clearly perceived need for such an activity. It will not go away, except insofar as business is successful in eradicating the root causes—in a way that the consumer can see and understand and believe. ☆

Key To Maritime Competiveness: U.S. Know-How

Lead from strength! If it works in bridge, it ought to work in making the U.S. merchant fleet more competitive worldwide, reasoned Marvin Pitkin, head of the Maritime Administration's Commercial Development Program.

"This country has always been able to compete, despite the higher cost of building and shipping goods on U.S. vessels, because we've managed to apply the things that we're best at—high technology, economies of scale, and management systems—to our maritime industry," says Pitkin.

Recently, however, he sees the U.S. preeminence being threatened. Many things have contributed to this country's difficulty in keeping its merchant fleet abreast of foreign competition—one of them being the huge stockpile of World War II vessels that made it unnecessary to build many new U.S. ships for twenty years. But another of the major causes, in Pitkin's view, is the increased role foreign nations are playing in subsidizing the modernization of their maritime industries.

"Let's face it, even the largest companies can't compete in research with a small country," he says. "And major nations, such as Germany and Japan, which are barred from military R&D by treaty, can devote a much higher percentage of their research effort to commercial fields."

"Besides which, most of the larger firms that are in the best position to support major research are multinationals, so the technology that resulted from their efforts wouldn't necessarily reside in this country," he points out.

Historically, the U.S. method has been to let industry do all the non-military research, from funding to finish. "Obviously we have to change this approach, or continue to fall behind in the area which should give us our strongest competitive advantage," Pitkin warns.

"What we're trying to do is use federal funds as seed money to help the maritime industry modernize itself. In essence, we are a joint venture partner with the maritime industry. As the holder of government equity capital we are continuously on the lookout for research that promises to improve the competitive position of the U.S. merchant fleet."

Pitkin has channeled his efforts into three R&D offices investigating ten specific research areas: The Office of Maritime Research deals with advanced ship systems, marine science energy re-

search, and market analysis; The Office of Advanced Ship Development performs research in competitive shipbuilding, advanced ship machinery, and nuclear ships; The Office of Advanced Ship Operations covers competitive shipping, advanced ship control, and advanced communications and navigation. These programs are correlated with the efforts of three other offices included in Pitkin's operation: Market Development, Port and Intermodal Development, and the National Maritime Research Center at King's Point, N.Y.

Red tape cutter

The area of competitive shipping, for example, offers high potential for trimming excess fat and speeding up operations.

Document processing required for U.S. foreign trade now accounts for an estimated 10 percent of the total value of the goods involved. The need to minimize this expense, while at the same time speeding delivery by expediting preparation of the documents has long been recognized. Maritime's competitive shipping specialists decided that, clearly, the solution lies in a field where the United States is the world leader: data processing.

The Shipping Operations Information System (SOIS) is bringing the computer to bear on the problem. "The idea behind SOIS is a philosophic blending of the management techniques of our more successful competitors: the Scandinavians and the Japanese," says Paul Mentz, who runs the program for Pitkin. "The Scandinavians put maximum emphasis on entrepreneurship and individual motivation to develop their full maritime capability, while in Japan the government steps right in and assigns everyone their tasks in the overall national maritime scheme.

"We felt there just had to be better management tools. There was a tremendous amount of loose pieces of paper and 'back of the envelope' stuff in this industry; this is what's been changing in the past five years.

"In 1970 we went to the 15 largest U.S. flag-shipping lines with detailed proposals on how we thought we could help them. Essentially, we said to them: 'We're going to work with you on your own terms, within, of course, the limits of the law.' After a good deal of consideration, the firms voluntarily bought the idea.

"We also worked through the American Institute of Merchant Shipping and the American Maritime Association to give the effort an industry-wide focus. We are interested in getting the working people in the industry together. This is a highly competitive industry and many of the individuals didn't even know each other.

"Primarily, we're trying to apply computer/communications technology to the management practices of an industry that traditionally had been slow to adopt change. It's working," adds Mentz.

The final SOIS capability is envisioned as a centralized computer facility containing a data base capable of serving all U.S. flag carriers through a network of ship and shore-based remote terminals linked to all sections of the transportation industry, as well as related government agencies, by satellite and ground communications.

All of that is beyond the horizon, however. For the moment, the system consists in developing a series of modules—individual programs that can function independently. Some firms, often because of varying computer capability, may not want to adopt all of the capabilities being developed under the SOIS. Thus while the system is designed to be a totally integrated program, its separate parts can also be used independently. They can also be employed as they are developed, without having to wait for the entire system to be completed.

To date 48 separate modules have been identified for development in four broad categories: cargo space documentation, intermodal coordination, fleet resource management and maritime industry reporting.

"We work with the companies on a 50-50 cost-sharing basis," Mentz says. "They develop what they're interested in that fits in with our plans. Firms can also recover up to 75 percent of their expenses through a nominal royalty of 5 percent of costs charged to each firm adopting any module which they developed.

"Only three years after the program actually began, we have $12 million worth of research work under way. That is right in line with our original estimate of about $20 million over the initial five years." Maritime industry experts expect the completed system to pay for itself in its first year of operation, even if only used by the nation's leading ship operators. Potential annual benefits for these firms thereafter would amount to $4 million, and the figure could go as high as $75 million per year if all U.S. flag operators join the system.

All this in addition to much faster and more efficient service!

The shipping companies select those modules which seem to promise the most benefits for their firms. Representatives of the 15 major U.S.-flag shipping companies meet with Mentz every six months to review every ongoing project. "People want to see, feel, touch before they're convinced that progress is really being made," he says. "Computer programs are not very exciting physically, so we try to go out and demonstrate them, to give these poeople a sense of achievement."

Industry leaders expect the completed system to pay for itself in its first year.

Also, an occasional newsletter to 200 key people in the participating lines helps keep them up-to-date on the program.

Internally, Mentz and his staff review each project every six weeks to make sure it is on track and no rough spots are developing.

After development and adequate testing, the completed modules will be offered to other U.S.-flag carriers on in-house computer facilities or on an international time-sharing computer complex.

"There have been some snags," admits Mentz,

COMPUTERIZED MANAGEMENT TECHNIQUES—They will cut down on congestion at U.S. ports, and improve the competitive position of American firms.

"especially in the area of computer capability. Every company has its own computer philosophy, which can cause tremendous problems when you're trying to introduce standardized practices. They have different computer programs and data storage structures, and sometimes even the equipment is not compatible with the techniques. All of which has given us trouble in trying to transfer capabilities from one firm to another."

The SOIS program is developing guidelines to assure compatibility of systems during module development. This affects hardware, software design, terminal/computer selection, communications systems and the documentation standards.

The need for standardization extends beyond the shipping industry, however. A joint government/industry panel will try to unify the diverse codes used by railroads, truckers, airlines, federal and foreign government commercial transport agencies, and the shippers themselves.

Down to specifics

Specifically, what do the individual modules deal with?

In the area of cargo documentation, the verification and correction of vessel numbers, shipment control numbers, consignee records, and freight payable brokerage codes will be computer-checked to assure conformance with standard cargo space booking practice. This information will then be used to produce a 'rate strip,' that completes the bill of lading and dock receipt for each shipment.

Personnel will determine within seconds the current status, location and disposition of each active shipment.

When completed, the system will also provide sales and management personnel with accurate, complete and timely information as to available cargo space, loading-gang size requirements, required type of equipment, and necessary loading time. Special handling requirements for dangerous or exceptional cargo, or the volume of freight to be handled will be known in advance.

An on-line query program will allow authorized personnel to determine within seconds the current status, location, and disposition of each active shipment. Customers will know immediately the situation of their shipment.

SOIS's Marine Terminal Control system will employ a series of electro-optical scanning devices that automatically read color-coded labels on containers. These scanners, located on dockside cranes and vehicle entrance lanes, will identify the equipment type, owner, and serial number, and include a sophisticated technique to guard against tampering.

The projections can be used to adjust marketing efforts.

Data from these scanners, weigh-in-motion truck scales, and input-output devices will be fed into a central computer programmed to automatically monitor the container from port terminal gate, through the yard, to final shipboard disposition.

Another module will provide 'load strips' listing the container number and yard location of the specific container to be loaded. These strips will be printed in the operations area in the same sequence that the containers are to be loaded, and will be detachable for use by the yard man responsible for delivering the container to the loading cranes.

Periodic reports on the status and location of equipment will also enable management to pare operating costs. The Intermodal Distribution Coordination program will track the cargo while it is using other modes of transportation, as well as keeping tabs on the location and condition of all containers and chasses. An on-line equipment control module will regularly report all status and location changes in equipment, and provide exact knowledge of container location and availability. Empty containers can thus be redirected to shippers while in transit, cutting both transport time and costs.

Other reports will automatically list containers that have not been moved for 30 days, thus alerting operations personnel to potential trouble spots.

The computer will also list the percentage of time containers are loaded, unloaded, in-service, out-of-service, and at domestic or foreign locations. By highlighting areas of under-use, the system will help maximize the use of existing equipment and avoid the expense of purchasing or leasing unnecessary new equipment.

Since damage to containers often results in damage to their contents, computer analysis of potential damage by container type, location, and carrier will enable management to take corrective action to reduce future loss and damage claims.

SOIS's Fleet Resource Management program will help steamship firms make more accurate sales and profit forecasts. It will include an automated data processing system to store, process and retrieve relevant market information enabling the carriers to make realistic sales projections and more accurate profit and loss tatements. By presenting updated information based on marketing value judgments, model building and simulation, the resulting projections can be used to adjust marketing efforts.

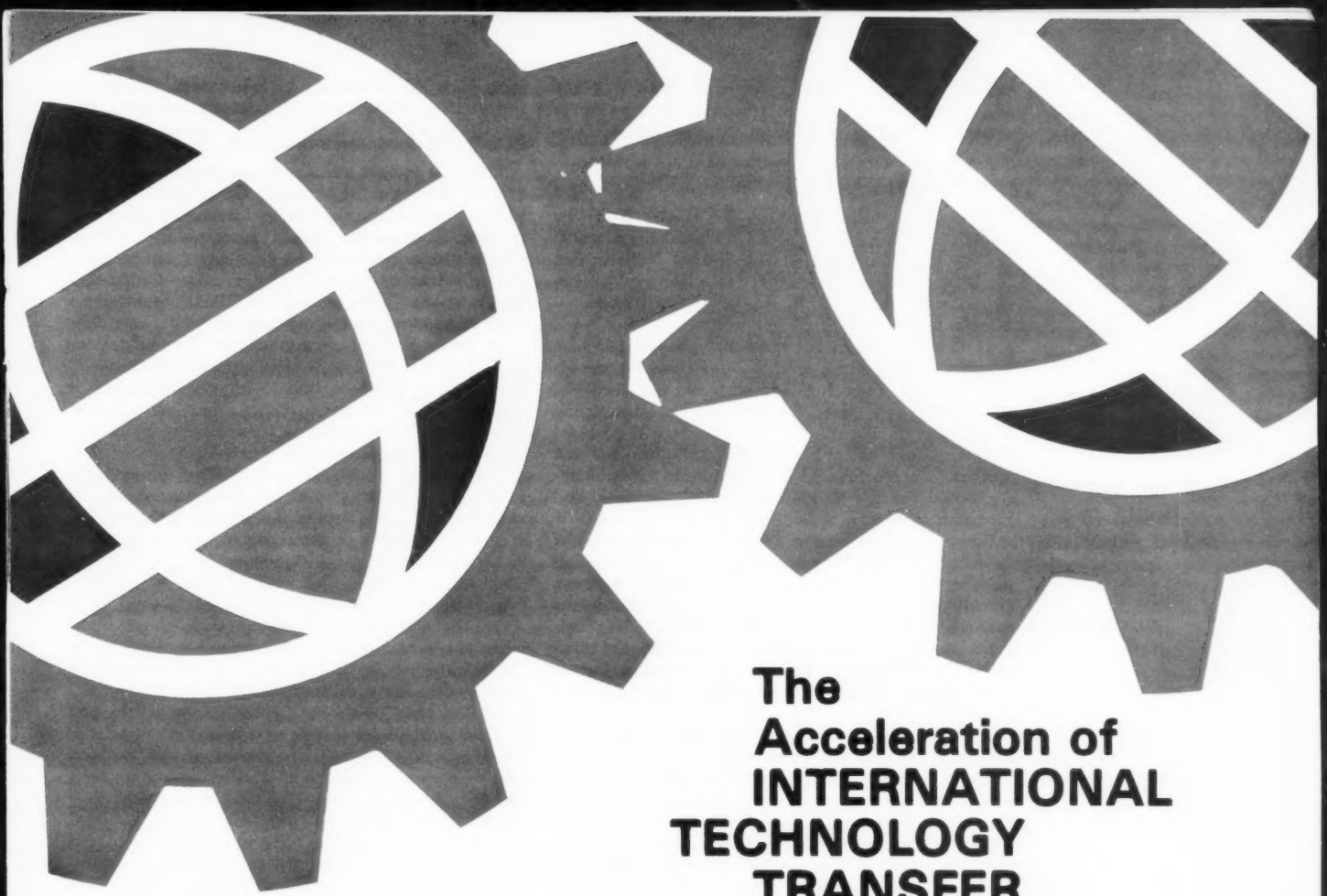
Special programs will enable marketing personnel to enter sales data into the system to determine the profit or loss from a particular vessel voyage. It will evaluate such variables as additional time in port, extra port calls, crew and vessel costs, income generated, and other items affecting a profit and loss statement.

"We're also beginning to move into Europe," reports Mentz. "After all, it doesn't make much sense to speed things up at this end but stick with business-as-usual at the other end. Several U.S. shipping firms are incorporating automatic billing into their European operations. However, they don't do the same things overseas as here, because the maritime industry isn't conducted on as big a scale over there. A basically conservative industry, shipping is even more conservative abroad, and less likely to move in a big way. However, they *are* moving," says Mentz.

Finally, three modules are directed toward automating the government's reporting requirements for the maritime industry, and cutting down on the submission of reports containing exactly the same information to different agencies at different times. "Of course we're paying 100 percent of the costs on these," says Mentz. "When completed they should put us in a position to do more with the data we receive, and do it quicker, as well as lighten the industry's reporting burden."

The SOIS program at present represents only a portion of its intended eventual scope. New research areas are constantly being identified, and other U.S.-flag ocean carriers are expected to join soon.

"This is an exciting program," says Mentz, "and it gets more exciting the deeper we get into it. It's really working." ☆



The Acceleration of INTERNATIONAL TECHNOLOGY TRANSFER

In a wide range of ways, the United States Government is speeding the pace of international transfer of modern technology, both on its own and in cooperation with other industrialized nations. Involved is the whole gamut of industrial activity and some of the most critical problems facing mankind today, such as the creation of new energy sources, new methods of producing food and effective new techniques for environmental protection.

The basic thrust of the U.S. effort is to aid the developing countries, while encouraging the development and transfer of technology among nations generally and while safeguarding U.S. security interests.

Focus on governmental efforts

The following survey of the ways in which global transfer of technology is being accelerated focuses on current U.S. Governmental efforts, and points to a number of programs, including some in the Commerce Department, that have not so far gained wide public attention.

It is readily acknowledged by government officials that the main channels of technology transfer are in the area of private enterprise, with the multinational corporation being a truly major conduit of this flow.

In its full use, the term "technology transfer" means, of course, many things, including the opportunities for basic engineering and scientific education in the U.S. for foreign students, advanced training here for foreign scientists and technicians, exchange of professors and scientific or technical specialists, exchange of published research, exchange of R and D activity, access to patents and technology, all the way to the complete establishment of plants by U.S. overseas subsidiaries, joint venturers or licensees.

Examining the governmental part of this broad scene leads currently to observation of the work of many joint official commissions set up by the U.S. with other nations, particularly those in which industrial and technological activity is largely government-run, such as in the communist nations and a number of Middle East countries. The U.S. and the USSR, for example, have about a dozen of these commissions at work. In another instance, the U.S. and Saudi Arabia have commissions now preparing the groundwork for an industrialization program of vast scope.

Basic U.S. thrust is to assist developing nations.

It should be noted here that the export of U.S. technology is subject to restraints under the Export Administration Act of 1969, which encourages worldwide trading relations, except where trade has been determined by the President to be against the national interest. It thus restricts the export of goods and technology which would make a significant contribution to the military potential of nations where it would be detrimental to U.S. na-

tional security. Currently the main effect of the Act is to provide for the review and licensing of exports, including technology, to communist countries.

U.S. offers basic plan

In the international forum, the United States is offering a basic plan to speed up technology transfer. It was announced at the United Nations last September by Secretary of State Henry A. Kissinger, and includes U.S. support for a number of efforts, including:

1) Creation of an International Industrialization Institute "to sponsor and conduct research on industrial technology together with the governments, industries, and research facilities of developing countries."

2) Creation of an International Center for the Exchange of Technological Information "as a clearing house for the sharing of ongoing research and new findings relevant to development."

United Nations hears many-sided American proposals.

Since Kissinger made these proposals, the UN General Assembly has adopted a resolution calling on the Secretary General to plan for an international network for exchange of technological information, conferring responsibility for its development on the United Nations Industrial Development Organization (UNIDO). The proposal for an International Industrialization Institute is in the preparatory stage.

Multinational corporations, as noted above, are involved in the brunt of worldwide technology transfer. In his UN presentation, Secretary Kissinger offered four guiding principles on the activities of multinationals:

1) They must obey local laws and refrain from unlawful intervention in the domestic affairs of host countries; 2) host governments must treat these enterprises equitably, without discrimination among them, and in accordance with international law; 3) both governments and business must respect the contractual obligations they freely undertake; and 4) principles for multinationals should apply to domestic enterprises where relevant.

TELECOMMUNICATIONS ENGINEERS IN COLOMBIA—Local engineers and technicians have received their training from foreign contractors, at home or abroad.

Patent and Trademark programs

The U.S. Patent and Trademark Office, a branch of the Commerce Department, is engaged in a number of programs relating to international use of patents, trademarks, trade secrets, and related matters. One concerns a technology transfer committee set up under the United Nations Conference on Trade and Development (UNCTAD) to develop a code of conduct on the transfer of technology. The code would specify certain rights and obligations of both the supplier of technology and the recipient. The Commerce Department, largely through the Patent and Trademark Office, has participated with the State and Justice Departments in formulating the U.S. policy on this proposal.

The Patent and Trademark Office is also involved in facilitating internationally the protection of U.S. patent and trademark rights, training programs for officials of industrial property offices of developing countries, and reviewing upon request the patent systems of various countries in cooperation with the affected countries.

On the technology promotion side, an effort is being made to line up foreign agents as outlets for the sale primarily of U.S. Government technology contained in technical and scientific reports.

In 1972 the Commerce Department was directed to develop plans for a new, systematic effort to promote the licensing of government-owned patents and to obtain domestic and foreign patent protection for technology owned by the government.

Accordingly, the Department's National Technical Information Service (NTIS) began filing patent applications and obtaining patents in foreign countries for government-owned inventions developed by Commerce Department agencies or transferred to NTIS by other federal agencies. NTIS has filed 98 patent applications in 24 foreign countries for 19 different government-owned inventions.

The existence of U.S.-held foreign patents on government-owned inventions is expected to make them more attractive to U.S. manufacturers, and build up production opportunities abroad for U.S. firms. The filing of the patents will recoup substantial royalties for the benefit of the U.S. taxpayer.

Transfer of standards

Also aiding in the technology transfer effort is Commerce's National Bureau of Standards (NBS), which is involved in work on safety and other regulatory standards, and certain specifications which incorporate technology so that it is available on a suitable basis for anyone who can use it. Most of the standards have been developed and written by private industry. In the NBS experience standards literature has become a highly important mechanism for the transfer of technology.

The State Department and the Agency for International Development (AID) asked NBS to see whether the service which it provided to government agencies and private industry with respect to standards could be made available to developing nations. A seminar held in 1971 attended by representatives of 13 developing countries was followed by a pilot program and now, once a year, NBS officials invite the standards, testing laboratory, and industrial quality control officials of developing countries to two-week examinations of how the

U.S. system works. In this effort, government, private industry, university, and independent testing laboratory people work with NBS scientists. Thus far, representatives of about 50 countries have attended.

NBS has followed up these efforts with further programs to help developing countries to make up-to-date standards effective in their own economies.

An example of a Commerce Department program of cooperation in industrial research and development is that being worked out between the U.S. and Israel. This project follows a long period of extensive joint efforts between the two countries in science and technology. Dr. David B. Chang, Deputy Assistant Secretary of Commerce for Science and Technology, says it could be a prototype for others.

"Efforts now might be directed," he explains, "at using the farm as a source of intermediate raw materials for industry. Plant materials should be considered for conversion into liquid or gaseous products for fuels and other uses. Plant oils might be extracted for use in plastics, lubricants, detergents, plasticizers and other products now being derived from petrochemicals. Starches are showing promise as fillers in rubber products to replace carbon black now made from natural gas.

"A related subject is biotechnology, which is of interest in connection with the food industry and microbiological industries. Residues from crops and waste materials might be converted by microbiological and biochemical processes into useful materials."

Some views on technology transfer, from the recipients' viewpoint:

Brazil emphasizes the human factor. Dr. Jose Dion de Melo Teles, President of the Brazilian National Council for Scientific and Technological Development, says, "My opinion is that transfer of technology is possible only when you have skilled people at the proper level. I don't believe technology is transferred through contracts, mechanical gear and computers—but through educated brains."

Finland notes the benefits that can be derived from large-scale operations, such as in the U.S. Esa Anttila, scientific attache of the Finnish Embassy in Washington, observes, "The technology transferred from the United States to Finland is widely divided, but the most important sectors are those whose development work is expensive and which demand the resources of a big country. . . . nuclear technology, electronics (computers and their components) and the chemical industry (refineries)."

Kenya wants the industrialized nations to know that the welcome mat is still out, despite its drive for "Kenyanization" of its manufacturing base. A recent Kenya declaration asserts: "The government is committed to a mixed economy of private and government enterprises. In the manufacturing sector heavy reliance will be placed on private enterprises, including investment from abroad. Foreign enterprise will be welcome and will be assured the possibility of adequate repatriation of profits."

Cooperation with Japan

Dr. Chang also described cooperative efforts under way with Japan in the energy field, after the signing of an agreement on energy. A nuclear agreement previously had been put into effect.

An agreement has been drawn up, he says, in the geothermal area, and cooperation possibilities exist in hydrogen energy, solar energy, and coal gasification, all involved in Japan's "Project Sunshine."

The U.S. is engaged in cooperative efforts involving technology transfer to 13 nations in the Organization of Petroleum Exporting Countries (OPEC). This activity has been the subject of hearings by the Domestic and International Scientific Planning Subcommittee of the House Science and Technology Committee, which centered on science and technology cooperative agreements between the U.S. and the OPEC nations, especially Saudi Arabia and Iran.

U.S. is working with Israel, Japan, Iran, Saudi Arabia and others.

Dr. Oswald H. Ganley, Acting Deputy Assistant Secretary of State for Advanced and Applied Technology Affairs, explained that in Iran projects are under discussion in agriculture, fertilizer production, manpower training, housing and urban development, and science and technology areas including oceanography, radio-astronomy, seismic studies, geological and mineral surveys, and remote sensing applications. U.S. Government assistance is to be reimbursed by the Iranian Government.

"Science and technology," Dr. Ganley said, "is beginning to become recognized as a vital part of diplomacy, not just by us but more importantly as other countries see that science and technology are something that they really want."

Technology interchangeable

William T. Knox, Director of Commerce's National Technical Information Service, an extensive distributor of technology through the sale of technical documents, data files, and computer programs to both domestic and foreign buyers, makes some key observations about technology transfer among nations.

"There are very few technologies," he says, "so all-encompassing that you can't do it some other way. Thus, it is not an either-or game. We may have one technology. Other nations may find some other technology to achieve the same thing.

"About all anyone can preserve is time and advantage. Technology doesn't stand still. We are on a treadmill, and we have to keep running.

"There is no question that the United States has been the primary generator of technology in the last 20 years, especially in certain fields, such as oil production, oil refining, computers, agricultural machinery, and others. However, other nations are now producing substantial technology. Thus our contribution, on a percentage basis, is decreasing.

"The overseas situation is changing fast. In the 1950s, we were so predominant in the generation of technology that we were sending out almost everything we had and relied little on bringing technology in. That is now changed. We are now bringing in considerable amounts of technology from other nations. But we still have the largest capacity to generate technology directly useful for economic development." ☆

Energy Management Digest

ENERGY COORDINATOR . . . Commerce Secretary Elliot Richardson, who is also chairman of the President's Energy Resources Council, has established a Nuclear Energy Subcommittee of the ERC "to assure the coordination of Administration policies, programs and analytical responsibilities concerning nuclear power policies." The Subcommittee will be comprised of the Energy Resources Council members representing the Environmental Protection Agency, the Energy Research and Development Administration, the Department of State, the Nuclear Regulatory Commission, the Office of Management and Budget, the Federal Energy Administration and the Department of Commerce. Additional agency representatives will be added as needed to deal with specific problems or activities.

SYNTHETIC STATEMENT . . . A draft environmental statement on a proposed Federal program to initiate commercial production of synthetic fuels from coal, shale and wastes has been issued by the Energy Research and Development Administration and the Department of Interior. The 1000-page draft statement, ERDA 1547, assesses the anticipated environmental, social and economic impacts of commercial synthetic fuel plants constructed with the aid of proposed federal financial incentives. The federal incentive program is designed to produce an initial goal of 350,000 barrels of synthetic fuel per day. Information gained during this limited program would be used as the basis for later decisions possibly to accelerate production to one million barrels per day by 1985.

FIRST PRIZE . . . The Consulting Engineers Council of Michigan presented their top annual engineering achievement award to Smith, Hinchman & Grylls Assoc. for the design of a one-thousand square foot solar collector located on the roof of their Detroit headquarters. The system is highly instrumented, and will be collecting data at fifteen minute intervals on a number of pressures and temperatures. This data will be fed into a computer and the cumulative information will be made available to government and research agencies.

WOODSMAN, SPARE THAT GAS . . . Sponsors of Operation Woodshed in Chicago claim that their program for using waste wood as an energy source will conserve more than 7.5 million cubic feet of natural gas for the city each day. Employing techniques already proven feasible by industry, twenty-five such plants in major metropolitan areas supposedly could save the nation 68 trillion cubic feet of natural gas or 500 million gallons of heavy industrial fuel oil annually. The project directors hope to demonstrate that by using "up-sized" machinery to accommodate a variety of sizes and shapes and by pneumatically and magnetically removing non-combustibles, they can develop a new energy source.

TWO-WAY SAVINGS . . . Saving energy both during the production of a car and during its whole lifetime, new fiber glass-reinforced plastic composites may be the most energy-efficient materials for tomorrow's autos. Not only is there improvement in gasoline mileage through weight reduction, but the energy involved in making an automotive part with reinforced plastic is somewhat less than steel and considerably less than aluminum, reports PPG Industries. PPG used plastic compounds to produce prototype parts for retrofitting a 1975 Pontiac Ventura to determine how much weight could be eliminated through their use. Savings per part ranged from 47 to 65 percent, for a total of 200 pounds. Many additional pounds were saved because the lightweight plastics allowed installation of a smaller engine and lighter chassis and transmission.

GROUP BACKS DEREGULATION . . . The National Industrial Energy Council has voted to support deregulation of natural gas in order to encourage development of new sources of this fuel. The National Industrial Energy Council is composed of 26 chief executives, representing a cross section of U.S. industry, which advises the Secretary of Commerce on energy matters. The Council declared that deregulation of new natural gas should have the highest priority, and that it was one of the most critical measures that could be taken toward achieving energy independence.

ENERGY'S GENETIC IMPACT . . . A new research program in human genetics, aimed at developing methods for monitoring human mutation rates, will soon begin at the University of Michigan under a five-year ERDA contract. The new effort, which is expected to contribute significantly to the understanding of biological effects of energy-related pollutants, will be carried out by the University's Department of Human Genetics.

Commerce's Uniformed Corps Wins Its Battles By Doing Scientific Ocean Research

Move over Pentagon! Although not many people know it, the Commerce Department is the parent of one of the country's seven uniformed services. Not exactly ready to rival the U.S. Army, Navy, Marines or Air Force, Commerce's National Oceanic and Atmospheric Administration Corps consists of 388 officers whose duties include hydrographic, oceanographic and geophysical investigations as well as shiphandling and navigation. (The other uniformed services are the U.S. Coast Guard and the U.S. Public Health Service.)

Their work often directly benefits such commercial civilian industries as shipping, fishing, petroleum, ocean mining and many others.

At any given time, almost one-half of the Corps is assigned to sea duty aboard the ships operated by NOAA; other officers are assigned to mobile shore duty; and the remainder to fixed shore duty billets. Assignments average 1½ to 3 years in length.

The NOAA Corps was created in the Coast and Geodetic Survey by an Act of Congress in 1917. At that time, the major activity of that organization was hydrographic and geodetic surveying, for which engineers qualified for marine command were needed. Originally this need was met by using Navy and Army officers, but they became unavailable after 1898. This led to the establishment of the Coast and Geodetic Survey Commissioned Corps.

As the career plan developed, the officers received assignments in geodesy, photogrammetry, hydrographic surveying, seismology, gravity, magnetics, tides and currents, and cartography.

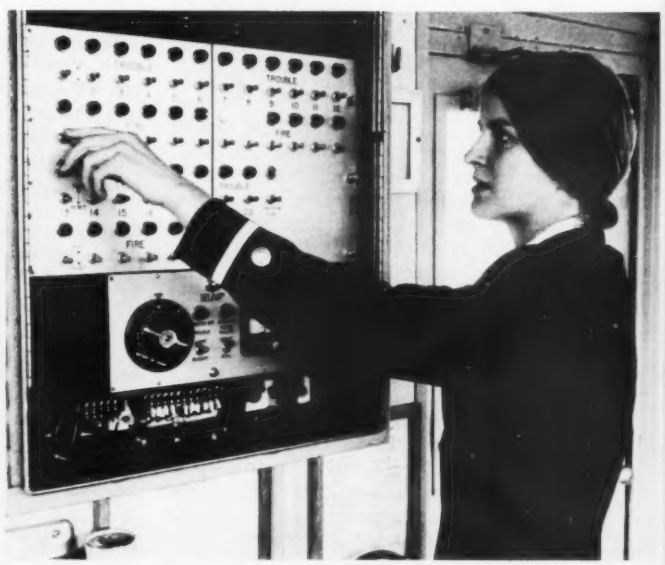
The NOAA Corps services the following Commerce agencies: National Ocean Survey, National Weather Service, National Marine Fisheries Service, National Environmental Satellite Service, Environmental Research Laboratories, Environmental Data Service and Office of Sea Grant; as well as agencies that were formerly administered by the Department of the Interior, the U.S. Navy, the U.S. Coast Guard, the Army Corps of Engineers and the National Science Foundation.

Sea duty is the common denominator for every NOAA officer and is normally the initial assignment for the newly-appointed. Officer duties include shiphandling, navigation, hydrography, carrying out oceanographic and geophysical investigations, as well as specific scientific operations and administration.

NOAA's larger ships are designed for long cruises involving physical oceanographic and deep ocean surveying. The medium and smaller size ships do proportionately more coastal work. They do hydrographic surveying in order to gather data for nautical and bathymetric charts, and fisheries research. The smallest ships are of special designs used for current studies, wire drag hydrography or laboratory support.

Extended operations may keep the ships at sea for periods of up to eight or nine months. NOAA's ships normally work about four months on a project, return to home ports such as Norfolk, Va., Seattle or Miami for brief periods and then go out for another extended period.

Mobile shore duty involves a great deal of travel, with trips lasting anywhere from a few days to a year. The duty may be from a fixed location, but generally is



STEERING CLEAR OF TROUBLE — *NOAA Corps officers alternate sea and shore duty. When at sea, they must be fully competent in navigation and ship handling, as well as their specialties, such as oceanography, geodesy and hydrography.*

on a field party working in geodesy (precise triangulation and/or leveling), photogrammetry, gravity, hydrography, flight duty or tides.

The NOAA Corps has many similarities to the other uniformed services, and a few differences. Their uniforms resemble those of the U.S. Navy, Coast Guard and Public Health Service. NOAA officers receive the same basic pay and allowances and the same on-base privileges, such as post exchange and commissary. Officers and their dependents receive medical care at Public Health Service or Armed Forces medical facilities.

Retirement and survivor benefits are similar. NOAA officers may be transferred to the Department of Defense for duty as required in time of war or national emergency. And they are covered by the benefits and services of the Veterans Administration.

A major difference is the lack of enlisted or noncommissioned personnel within the NOAA Corps. NOAA officers are not subject to the Uniform Code of Military Justice except when they have been transferred to the Department of Defense. And NOAA does not have military bases or base housing and other facilities.

Qualifications for appointment to the NOAA Corps include a bachelor's or higher degree in engineering, mathematics, physics, oceanography, meteorology or other physical, geophysical or biological science discipline from an accredited college, maritime academy or university. An applicant must have completed at least 48 semester hours of NOAA-related science, including mathematics through integral and differential calculus, and physics through mechanics, electricity and light. Applicants must be citizens of the United States and meet high physical standards.

Classes of appointees to the NOAA Corps are formed several times a year. Initial training consists of a 10-week orientation course at the NOAA Officer Training Center located at the U.S. Merchant Marine Academy, Kings Point, N.Y. The course includes classes in seamanship, navigation and piloting as well as NOAA orientation and uniform protocol. Upon completion of the course, officers usually are assigned to a NOAA hydrographic or oceanographic survey ship for approximately twenty-four months.

Because few people enter the NOAA Corps prepared to apply their academic knowledge directly to NOAA's activities, much of the officer's early career is spent in a learning situation. After four to six years' service, graduate study is available to a limited number of officers. Each year, one or two officers who have had more than three years' service and meet the high physical requirements are selected to undergo pilot training.

Other advanced training opportunities are made available to officers who wish to improve their qualifications.

The NOAA Corps has, for nearly 60 years, provided the U.S. Government with the technical talent needed to conduct a systematic study of the total physical environment of the earth and the needed supporting research.

UP FROM THE DEEP—*NOAA Corps officers aboard the NOAA ship Rainier release material from a grab-bottom sampler in the Bering Sea area.*

Solar Heating, Cooling Units Get OK For Federal Program

Thirty-six complete commercial systems for space heating, water heating, or heating and cooling of residential and business buildings by solar energy have been designated as technically acceptable for use in a federal demonstration program.

The Energy Research and Development Administration selected the 36 based on data submitted by the makers of 130 systems.

The designation "technically acceptable" is not a certification of the systems, and neither ERDA nor any other agency certifies the design or performance of the systems, nor does the government guarantee that it will procure any of them. However, both the Department of Housing and Urban Development and the Department of Defense are expected to use several of the systems in residential building demonstrations which are part of a national solar heating and cooling program coordinated by ERDA.

Manufacturers of systems that were found to need further testing have been invited to submit test plans to ERDA for possible funding assistance.

The 130 submissions came from 85 organizations, of which 75 are small businesses. "We can't assume that we've identified all solar heating and cooling systems that are technically acceptable, since the responses were completely voluntary and some manufacturers may have chosen not to respond," says Dr. Henry Marvin, director of ERDA's Solar Energy Division.

The acceptable systems are described briefly in a report released by the Technical Information Center, P.O. Box 62, Oak Ridge, Tenn.

Companies whose systems were approved are:

Hot water heating only: Daystar Corp., Burlington, Mass. (three models); Energex Corp., Las Vegas (twelve models); Fred Rice Productions, Van Nuys, Cal.; Raypak Inc., Westlake Village, Cal.; Sola-Ray Appliances, Tuart Hill, West. Australia; Solaron Corp., Commerce City, Colo.; Solar Products, San Juan, P.R.; Sunsource Pacific, Honolulu; and Sunworks, Guilford, Conn.

Space heating only: Daystar Corp., Burlington, Mass.; General Electric, Philadelphia; Reynolds Aluminum, Richmond, Va.; Skytherm Processes, Los Angeles; Solaron Corp., Commerce City, Colo.

Space heating and hot water: Daystar Corp., Burlington, Mass.; General Electric, Philadelphia; Honeywell, Minneapolis (two models); Piper Hydro, Anaheim, Cal.; Solar Energy Products, Avon Lake, Ohio; Solaron Corp., Commerce City, Colo.

Space heating and cooling: Skytherm Processes, Los Angeles.

Space heating, cooling and hot water: General Electric, Philadelphia.

Hard-Nosed Energy Policies Can Bring Independence By 1985

The U.S. can achieve energy independence by 1985 without sacrificing its economic objectives, according to the Federal Energy Administration's *National Energy Outlook*.

In delivering the study to President Ford, FEA Administrator Frank G. Zarb said, "If we have not lost our ability as a nation to be tough-minded and take the obvious aggressive actions, we will reduce our imports and increase production enough to eliminate our vulnerability to future embargoes. Our forecasts show that we can indeed regain energy independence, but we must be realistic and dedicated to our goals."

According to *Outlook*, an update of last year's *Project Independence Report*, U.S. oil imports, which are currently 6.1 million barrels per day (MMB/D), will continue to increase in the next two years, until Alaskan production begins. With gradual deregulation of oil and gas prices, intensive efforts to increase domestic production, and continuation of current world oil prices, 1985 imports could drop to 5.9 MMB/D.

However, with accelerated production and increased conservation efforts, imports could decline all the way to 1 to 2 MMB/D in 1985.

On the other hand, if domestic oil and gas prices are regulated at low levels imports could reach 13.5 MMB/D that year, the report says.

The report further points out that even if imports decline by 1985, they could increase again by 1990 as production from older oil fields declines. This decline could be prevented by the use of nuclear power, coal, synthetic fuels, and emerging energy sources such as solar power.

Energy demand

Because of higher prices, the report expects demand through 1985 to grow at 2.8 percent a year, rather than at the 3.6 percent of the 20 years before the 1973 oil embargo. An active conservation program could hold the growth rate to only 2.2 percent. If world oil prices decline to $8 per barrel, however, or if oil and gas prices are regulated substantially below market levels, demand could grow by more than 3 percent per year.

The report also estimates that domestic crude oil production could increase to 12.3 MMB/D by 1985, up from 8.4 MMB/D in 1975, if market prices are permitted to stimulate domestic production and an aggressive Outer Continental Shelf (OCS) leasing and development schedule is pursued.

The supply of oil from existing onshore reserves will decline as older fields are depleted. However, more extensive use of secondary and tertiary recovery and new fields could keep onshore production about constant. Alaska will be the greatest new source of oil, while OCS production could more than double by 1985.

Natural gas production is expected to decrease during the next few years, according to the report, but then increase to 22.3 trillion cubic feet (Tcf) in 1985 if prices are deregulated (compared to 20.1 Tcf in 1975). If current interstate price regulations continue, the study says, production could decline to 17.9 Tcf. Supplemental gas supplies could play an important role in the 1980s and beyond. Alsakan gas could supply more than one trillion cubic feet before 1985, if necessary transportation systems are completed, while liquefied natural gas could supply as much as two trillion cubic feet by that year.

Coal production depends greatly on the growth in electricity demand and on the price of oil. At today's oil prices, coal production could increase from 639 million tons in 1975 to 1,040 million tons in 1985. However, if imported oil drops to $8 per barrel, coal production would be about 895 million tons in 1985.

Western coal production, mainly from surface mining, could increase from 92 million tons in 1974 to 380 million tons by 1985. Large-scale development in the West could have significant social and environmental effects, or may be inhibited by state or regional restrictions.

Eastern production could increase by about 30 percent; most of the increase will come from underground mining because low-cost surface reserves are being depleted.

Solar, geothermal, and synthetic fuels will contribute only about one percent of domestic supplies by 1985. Major contributions from these and other emerging technologies will not be realized until after 1990, in the report's view.

Electricity, which provided 28 percent of the nation's energy in 1974, will probably continue to grow at about twice the rate of total energy demand. Thus, is growth rate would be reduced to about 5.4 percent, compared to its historic rate of 7 percent. Electricity could provide 37 percent of U.S. energy. in 1990.

The use of coal in electric generation could increase by 77 percent, in the next 10 years—from 392 million tons in 1974 to 700 million tons in 1985. Nuclear power could generate about 26 percent of U.S. electricity by 1985, compared to 8.6 percent in 1975. This is a 30 percent smaller contribution than previously projected—142,000 megawatts, as opposed to 204,000 megawatts—due to cancellations and deferments.

Looking at capital investments for energy, the report predicts that:

- Energy investments in the U.S. will be about $580 billion (in 1975 dollars) over the next ten years. This is about 30 percent of fixed business investment, which is energy's historical share. The largest investment will be in the electric utility sector, which could account for 47 percent of the total, and in which the greatest potential problems exist.
- Oil and gas investments, which will depend greatly on the pricing and policy strategies adopted, could range from $160 to $315 billion. Coal investments could increase to $18 billion or only 3 percent of the total, but representing a 200 percent increase from the 1964-1974 total of $6 billion.
- Investments to increase energy efficiency also could be significant, perhaps an additional $250 billion through 1985.

Copies of the *National Energy Outlook* may be purchased for $7.30 from the Superintendent of Documents, GPO, Washington, D.C. 20402 (GPO Stock Number 041-018-00097-6).

Building Regulations Papers Sought For Conference

Commerce's National Bureau of Standards has issued a call for papers to be presented at a building regulatory research conference and a workshop in administrative procedures for building regulatory officials September 20-21, in conjunction with the Ninth Annual Meeting of the National Conference on Building Codes and Standards in Hyannis, Mass.

The conference/workshop will provide an opportunity for researchers from industry, universities, public interest groups, and government to exchange ideas with state and local building regulatory officials and code administrators.

Papers are sought in such subject areas as the following: legal, economic and other bases of building regulation; evaluation of regulatory agency management; the effects of building regulation; planning, policy and political action; innovative administrative applications; experiences with computers and microfilm; and others.

A one-page typed abstract of each paper, along with a biographical sketch, should be submitted before April 30 to Patrick W. Cooke, Office of Building Standards and Codes Services, Room B146, Bldg. 226, National Bureau of Standards, Washington, D.C. 20234. Selected authors will be notified, and final papers are due by July 31. Further information may be obtained from Patrick Cooke at 301-921-3361.

Views Sought On Private Recycling Of Nuclear Fuel

The Energy Research and Development Administration has invited expressions of industrial interest in commercial reprocessing and recycle of nuclear fuel used in light water reactors. Responses to this request are expected to help define the reasons for a slow-down in commercial development of the reprocessing of nuclear fuel and recycle of uranium and plutonium needed to stretch the nuclear fuel reserves in the United States.

The information will be used to help determine if further federal action is needed to assure a reprocessing and recycle capacity in this country. The continued lack of this capacity will result in increased nuclear electricity costs due to a growing scarcity of uranium by the 1980s, according to ERDA. Also, it will greatly increase the demands on limited uranium milling and enriching capacity.

Private industry, which has already indicated a need for some forms of government assistance, reports that its attempts to provide reprocessing and recycle capacity have come to a temporary standstill because of regulatory, technical or economic uncertainties.

Efforts to date

The private sector's efforts include:

—The first plant built to reprocess spent fuels from light water nuclear reactors was built by Nuclear Fuels Services at West Valley, N.Y., and operated from 1966 through 1971. The company is presently expanding and improving the plant, expecting it to be back in operation by 1983.

—The General Electric Co. built a plant at Morris, Ill., to reprocess reactor fuel using processes different than those previously used in an attempt to lower the cost. After extensive testing, GE concluded that the plant, as built, was not operable.

—The Barnwell Nuclear Fuel Plant, being built by Allied-General Nuclear Services at Barnwell, S.C., is nearing completion.

—Exxon Nuclear Co., Inc., has applied to the Nuclear Regulatory Commission for authorization to construct and operate a spent fuel storage facility and reprocessing plant near Oak Ridge, Tenn.

From its inquiry, ERDA hopes to better understand current industrial activities and plans aimed at developing spent fuel reprocessing and recycle services. Industries will be asked for suggestions on what steps by industry or minimum actions by ERDA could overcome specific obstacles to commercial reprocessing and recycle. If ERDA determines that federal assistance is required, it will attempt to identify how recommended assistance will overcome the obstacles, and why action by industry alone would not successfully overcome these impediments.

Through this request, ERDA also hopes to identify possible utility companies' interest in participating with potential reprocessors in joint ventures.

Expressions of interest should be submitted by April 12 to Nat Stetson, Manager, Savannah River Operations Office, ERDA, P.O. Box A, Aiken, S.C.

Call Issued For Papers At Mathematical Conference

Commerce's National Bureau of Standards and the Association for Computing Machinery have issued a call for technical papers of a theoretical or practical nature for the Bicentennial Conference on Mathematical Programming, scheduled for November 29-December 1 at Gaithersburg, Md.

The conference will focus on the design, implementation and use of mathematical programming subroutines and systems—past, present and future—with special emphasis on those aspects arising from the application of computer technology.

For a brochure listing suggested topics and containing information on submitting papers, contact William Hall, Applied Mathematics Division, Building 100, Room A428, National Bureau of Standards, Washington, D.C. 20234 (301-921-3855).

Deadline for submission of papers is June 1.

Two Books Published On Industrial Noise

Two new books on noise control are now available.

Handbook of Industrial Noise Management and Economics, by Richard K. Miller, tackles such issues as the effect of Workman's Compensation Laws on noise control programs, when it is nonfeasible to quiet the plant, defining overall costs, assessing benefits, and obtaining financial assistance.

Secrets of Noise Control, by Miller and Albert Thumann, illustrates noise abatement techniques by use of job simulation experiences. This book is designed for those who wish to apply noise control techniques to solve real problems, meet present and future noise regulations and save money on noise abatement costs.

The books are available, priced at $19.95 each, from The Fairmont Press, 134 Peachtree Street, NE., Suite 1320, Atlanta, Ga. 30303.

Conference To Probe Computer Simulation Of Material Behavior

When in doubt, run it through the computer!

That could be the motto of more than 300 scientists and engineers from the United States and several foreign countries who will exchange information on using computer simulation techniques to study the behavior of materials at an April 19-21 conference at Commerce's National Bureau of Standards.

The techniques of computer simulation are being used increasingly to study aspects of the behavior of materials that are too complex to be studied in an actual experiment. Mathematical models are designed to simulate these complex systems and are then solved by high speed computer. The results often lead to better understanding of actual experiments.

The conference is divided into seven general areas of materials simulation:

—Industrial applications (welds, coatings, composites);
—Transformation/kinetics (diffusion, phase transformations, solidification);
—Defect structures (point defects, dislocations, grain boundaries, cracks);
—Electronic and lattice dynamic processes (scattering, conductivity);
—Large scale deformation and fracture (finite element analysis);
—Crystal growth and corrosion processes (interface kinetics, oxidation, stress corrosion); and
—Image simulation (transmission electron and field ion microscopy).

For further information, contact R. B. Johnson, B348 Materials Building, National Bureau of Standards, Washington, D.C. 20234 (301-921-2835).

Guide to OSHA Issued For Industrial Truck Users

An updated *Management Guide to O.S.H.A. for Industrial Truck Users* has been issued by Eaton Corporation's Industrial Truck Division, covering complete basic information on the Federal Occupational Safety and Health Act.

The 16-page illustrated guide covers the purpose and basic provisions of the law, and clarifies requirements for industrial truck users. Among the subjects covered are safety guards, proper lighting for operating areas, lift truck operation within trucks and railroad cars, control of noxious gases and fumes, operator training, industrial truck maintenance and occupational noise.

The brochure is available from Eaton Corp., Industrial Truck Division, 2500 Office Center, Willow Grove, Pa. 19090 (215-673-1200).

IBM Plan Measures Efficiency Of Non-Manufacturing Employees

A desire to maintain its full employment tradition prompted IBM Corp. to invent a unique method of improving productivity of workers not directly involved in its manufacturing processes.

A Common Staffing Study (CSS) system, which can be applied to tasks ranging from secretarial services to engineers, has been instrumental in helping the giant business machine manufacturer headquartered at Armonk, N.Y., to achieve nationally-recognized productivity improvements. CSS covers the indirect resources (workers who do not directly touch the product being manufactured) in 34 IBM plants in 13 countries.

J. D. Schlumpf, director of manufacturing planning at IBM, reports that the CSS concept has almost universal applicability. "It provides some very valuable insight into the future, to assist our manpower planning, Schlumpf says.

In fact, IBM's entire productivity program originated from the desire to maintain its time-honored full employment tradition which involved balancing the workload between all plant locations and all vendors in good times and poor. This necessitated good resource planning.

CSS does not attempt to measure most indirect manufacturing jobs to determine the minimum requirements to accomplish a task with 100 percent performance. CSS describes the productivity at one point in the process and then strives to improve it at each point further down the line.

Basic steps

Basic steps to CSS are:

Defining the activities. Designing a common set of descriptions of all the tasks that can be consistently understood and reasonably interpreted by every department manager at every plant. IBM has 160 activities in 14 CSS model functions, such as personnel, finance, manufacturing and engineering.

Identifying the cause or modifiers. Modifiers are the factors in manufacturing that cause indirect work. An example of the 110 modifiers used at IBM is plant population, which would change the need for secretarial services.

Company-wide surveys. Survey all plants to obtain relevant data for analysis and action plans. IBM locations provide annual input via terminal into a computer data base.

Data analysis. The data base from all worldwide IBM manufacturing locations is structured and mathematically exercised by various computer programs. The foundation for each exercise is the productivity ratio of people per unit of modifier for each activity at each plant.

These ratios are used in a comparison between plants, an annual measurement of productivity improvement that a particular plant has made since the last survey, forecasting the indirect requirements for the next two years and the indirect productivity improvements which may be necessary.

These comparisons encourage people in one location that may not measure up to the unit performing the same function at another location to discuss the reasons for the difference.

The valuable data base has proven an unanticipated benefit, providing the grist for numerous special studies and manufacturing assessments. The entire data base for all plants from this year and prior years is in computerized files and is accessible for any "what if" studies by any location.

"We can test, for example, the implication to indirect resources of adding a new facility, combining one or more plants, new products, or moving products from one plant to another," Schlumpf pointed out.

Schlumpf concludes that the real benefits have accrued not because of the mathematical techniques but because some discipline was implemented where very little existed before. This, coupled with high level emphasis on productivity, has provided a tool that is used throughout the entire manufacturing management team at IBM.

Schlumpf described the CSS process for approximately 250 persons who attended a productivity seminar, sponsored by Commerce's New York District Office, at First National City Bank's corporate headquarters recently.

Productivity, Real Wages Gain In 1975 After 1974 Decline

Productivity in nonfinancial corporations increased 3.9 percent in 1975, according to preliminary figures of the U.S. Department of Labor's Bureau of Labor Statistics. The increase compares with a 2.7 percent decline in 1974.

The 1975 increase reflects a larger decline in hours than in output, as both measures continued the declines begun in 1974. In 1975, output declined 2.4 percent and hours declined 6.1 percent on an annual average basis.

The nonfinancial corporate sector includes all corporations doing business in the United States with the exception of banks, stock and commodity brokers, and insurance and credit agencies. The productivity and cost series for the manufacturing and nonfinancial corporate sectors are based on revised National Income and Product Account measures published by Commerce's Bureau of Economic Analysis.

Hourly compensation, which includes both wages and supplements, increased 10.2 percent in 1975, compared with 9.6 percent in 1976. The 1975 increase was the largest in the 1959-75 period.

Unit labor cost, which reflects changes in both output per hour and compensation per hour, increased substantially less in 1975 (6.1 percent) than in 1974 (12.6 percent), owing in large part to the increase in productivity in 1975 (3.9 percent). In 1974, productivity declined 2.7 percent.

Real hourly compensation (hourly compensation adjusted for changes in the Consumer Price Index) increased 1.0 percent in 1975, compared with a 1.3 percent decline in 1974.

Unit nonlabor cost (including capital consumption allowances, net interest and indirect business taxes) increased 13.2 percent in 1975, compared with a 16.1 percent increase in 1974. Unit profits recovered strongly in 1975, after having declined in the two prior years. The 31.1 percent increase for the year brought unit profits to their highest level since 1968.

Fourth quarter 1975 revised figures are now available from the Bureau of Labor Statistics. In the total private economy, productivity increased 0.6 percent, at an annual rate. The increase in output was 5.6 percent and in hours 5.0 percent.

In the manufacturing sector, output per hour of all persons increased at an annual rate of 6.5 percent, reflecting a 15.1 percent increase in output and an 8.4 percent increase in hours.

Thirteen Firms Honored For Social Responsibility

Thirteen major American companies—including an oil company, the nation's biggest bank and a cigarette maker—have won 1975 corporate social responsibility awards.

The awards for 1975, sponsored by the quarterly journal *Business and Society Review*, went to: Bank of America (overall program); Colgate-Palmolive (women's sports); Dayton Hudson (disclosure of information); Honeywell, IBM and Xerox (community involvement); McGraw-Hill (breaking sexist stereotypes); 3M (energy conservation); Mobil and Philip Morris (support of the arts); Sears, Roebuck (equal employment opportunity); Stop & Shop (consumerism), and Western Electric (support of minority enterprise).

Resource Recovery Study Predicts $5 Billion Market By 1990s

The market for resource recovery facilities, equipment and supplies is expected to mushroom to $5.3 billion by the 1990s, from a current level of $635 million, according to a new study by market research specialists Frost & Sullivan, Inc.

To bring this about, the 178-page study also forecasts a 30-fold explosion in the demand for engineering services over the next 25 years, more than a 20-fold growth in the market for materials handling equipment, and a 30-fold growth in the market for operations and management experience to run major resource recovery systems and to market their products.

The study notes that a substantial secondary materials industry already exists. But it uses the cleanest and the most reliable sources of only the most important materials—namely paper, aluminum, iron and steel. Moreover, the industry is plagued with problems of unreliable supply, uncertain quality, and widely fluctuating prices. The study predicts that refuse will become a substantial source for metals, paper, glass, ash and energy in the future.

Any regional resource recovery center will require many transfer stations as well, where waste will be collected, compacted, and baled for transportation to the recovery center, the study notes. Such a development could be a boon for the railroads. The market for extra-sized trucks will also rapidly increase, as will the demand for waste handling equipment, mixing and size-reduction equipment, separation equipment, baling and compacting equipment, and environmental control equipment.

Resource recovery facilities will also require skilled management talents and expertise not commonly found in today's sanitation operations. This function is likely to be contracted out to industry, the study says. Also, the success of a resource recovery center will depend on establishing markets for both the raw materials produced by a recovery center and the finished products made with them. Considerable opportunity will exist for firms that can develop such markets, the study notes.

According to the study, energy recovery will be the principal function of a resource center, paced by the already high price of fuel, the likelihood that its price will rise, and the preponderance of organic, combustible materials found in refuse.

Metals also offer great potential, because they add substantially to the profitability of a resource recovery system. Most systems under consideration recover at least iron and aluminum, the report points out.

The recovery of nonferrous metals poses a much more difficult problem, though this, too, appears feasible on many existing systems, according to the report. Both paper and glass, however, present even more difficult options. In light of the high cost to separate glass and its low value, resource recovery centers are likely to use the material as landfill or as an additive to road and other construction materials.

And the obstacles for recycling paper are unique. Vertically integrated companies have a vested interest in using virgin fiber and they also incur tax advantages spurred by a federal tax policy that accords timber capital gains treatment, the report notes.

For further information, contact Customer Service, Frost & Sullivan, Inc., 106 Fulton St., New York 10038, (212-233-1080) regarding Reference Report #381.

Generic Drug Industry Seen Tripling By 1985

Over the next ten years patents will expire on generic drugs that currently account for sales valued at $1.7 billion, reports the research firm of Frost & Sullivan.

Furthermore, their study says patent expirations will be the single most important factor why the market for generic drugs will triple in size by 1985, and it lists the brand names, patent number, expiration date, and manufacturer on the 78 best-selling patented drugs in the U.S..

The 235-page study, entitled *The U.S. Generic Drug Market,* divides that market into two segments: The branded generics encompass all those products whose patents have expired, but that are still also sold under brand names—this market, at $2.2 billion in 1974, will climb to $7 billion by 1985, according to Frost & Sullivan. The commodity generics include products sold by their generic name only, and this market will grow from $180 million in 1974 to $585 million by 1985, the study reports.

Commodity generic drug companies typically are small and resort to mail order sales. These companies also sell mainly to physicians and the U.S. Government, with strong recent inroads being made into the hospital market.

Physicians write generic prescriptions on about 11 percent of all drugs purchased by individuals, and when no brand is specified, the pharmacist is free to fill the prescription with any identical drug.

Between 600 and 700 drug firms are in the generic drug business, with roughly 100 of these considered major suppliers. The study suggests that foreign companies may use the generic drug business as a "likely way" to enter the U.S. drug market, the report concludes.

Seminars To Cover Worker Fall-Arrest Items, Guardrails

Mid-April Washington workshops for industry will review the preliminary findings of research by Commerce's National Bureau of Standards in two areas of occupational safety. NBS performed the research for the Occupational Safety and Health Administration.

Specific research findings concerning safety restraint and fall-arrest systems will be presented at an all-day session April 13. These will include proposed performance requirements for linemen's belts, life lines, lanyards, body harnesses, and other safety devices .

An April 14 meeting will feature studies of the effectiveness of personnel guardrails, including those that are designed to protect workers from hazardous environments.

The sessions will be held at the Department of Labor Auditorium from 9 a.m. to 4 p.m.

For further details contact either Brian Pierman of NBS' Office of Housing and Building Technology, 301-921-3232, or Tom Seymour of OSHA's Office of Standards, 202-523-7217.

Report On Arkansas Analyzes The Competition

A point-by-point development comparison of Arkansas and eight nearby states has been published by the Arkansas Industrial Development Commission.

The 12-page report, *Handbook of Industrial Taxes, Financing and Statutory Programs in Arkansas and Neighboring States,* compares industrial development legislation in the states of Arkansas, Kansas, Kentucky, Louisiana, Mississippi, Missouri, Oklahoma, Tennessee and Texas.

Contents include: state income, franchise and unemployment insurance taxes; in transit, sales and use, and ad valorem tax exemptions; financing programs including revenue and general obligation bonds, state loan or guarantys and other financing aids; right-to-work laws; industry training programs; and manufacturing employment changes.

The report is available without charge from Arkansas Handbook, Dept. A, Arkansas Industrial Development Commission, State Capitol, Little Rock, Ark. 72201.

Report Helps Homeowners Conserve Heat

Almost half of your heat may be going up the chimney or out the window rather than heating your home, according to a study recently released by the Energy Research and Development Administration.

ERDA's Oak Ridge National Laboratory has found that 35 to 55 percent of the heating value of the fuel used in a typical residential gas furnace system is wasted. This overall efficiency of only 45 to 65 percent is considerably lower than the efficiency of the average furnace, and represents losses attributable to the total heating system and method of operation.

According to the report, the greatest controllable loss from a forced, hot-air heating system is from uninsulated or leaking ducts in unheated areas such as attics, crawl spaces and basements—a problem that can be remedied by repairing and insulating ducts throughout the system. This source alone can account for the loss of as much as 40 percent of the heating value of the fuel.

The second greatest controllable loss (up to 10 percent) results from the cyclic operation of the furnace. This loss can be virtually eliminated by adjusting the furnace blower control to cause the blower to run for the maximum amount of time during furnace operation.

The report included a recommendation that the pilot flame be turned off during nonheating seasons and endorsed the routine cleaning and adjustment suggested by the equipment manufacturer.

In addition to its advice for consumers, the report contains several recommendations for the manufacture of new, high-efficiency gas furnaces which would use one-third less fuel than those of present design. These recommendations include: design all furnaces for sealed combustion and indoor installation; raise the American National Standards Institute full-load, steady-state efficiency standard from 75 to 80 percent; install electric ignition; set the fan switch at the factory to turn off at 80 degrees F; and develop standards, which could be codified, for the installation of gas furnaces to assure that the furnace and ducting are sized and installed for greatest efficiency.

Reference report: ORNL-NSF-EP-88, *Heat Balance and Efficiency Measurements of Central, Forced-Air, Residential Gas Furnaces.* The 65-page document is available at $5.45 per copy ($2.25 in microfiche) from: National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia 22161.

Calendar Of Business Events

Apr. 5-6 — Gaithersburg, Md. — Fire Standards & Safety Symposium, National Bureau of Standards. For information, Center for Fire Research, Technology Bldg., Room B147, NBS, Washington, D.C. 20234 (301-921-3143).

Apr. 5-7 — Washington — Metrication: Myths and Realities—Facing the Issues, Washington Hilton Hotel. For information, American National Metric Council Conference Registration, c/o Suite 700, 1629 K St. NW., Washington, D.C. 20006 (202-232-4545).

Apr. 5-7 — Houston — Mini-computers Seminar, Stouffer's Greenway Plaza. For information, Advanced Management Research International, Inc., 1370 Ave. of the Americas, New York 10019 (212-765-6400).

Apr. 5-8—Chicago—Design Engineering Show, McCormick Place. For information, Clapp & Poliak, Inc., 245 Park Ave., New York 10017.

Apr. 6—Hempstead, N.Y.—Evironmental Regulation and The Effect on Society Seminar, Hofstra University. For information, HUD/AIA Seminar, c/o Dept. of HUD, 666 Fifth Ave., New York 10019.

Apr. 7-8—Washington — Public Utilities Security Workshop & Exhibits, Quality Inn-Capitol Hill. For information, American Society for Industrial Security, 2000 K St. NW., Suite 651, Washington, D.C. 20006 (202-331-7887).

Apr. 7-8—Arlington, Va.—American Apparel Manufacturers Assn. Technical Forum II, Sheraton-National Hotel. For information, Fred B. Shippee, AAMA, 1611 N. Kent St., Suite 800, Arlington, Va. 22209 (703-524-1864).

Apr. 11-16—Atlanta — Basic Industrial Development Course, Georgia Institute of Technology. Accredited by American Industrial Development Council. For information, Robert B. Cassell (404-894-3843).

Apr. 12—Chicago — AMA Management Course, first session, Management Center. For information, American Management Assn., 135 W. 50th St., New York 10020 (212-586-8100).

Apr. 13-15—Birmingham, Ala.—Seventh Alabama Trade Fair, Birmingham-Jefferson Civic Center. For information, Purchasing Mgt. Assn. of Alabama, Suite 222, 90 Bagby Dr., Birmingham, Ala. 35209.

Apr. 15—Columbia, S.C. — Metrication Workshop, Town House Hotel. For information, Commerce Columbia District Office.

April 19-20—Gaithersburg, Md. — Conference on Computer Simulation for Materials Applications, Administration Bldg., National Bureau of Standards. For information, John Simmons (301-921-3355).

Pollution Control Seen Boosting Steel Industry's Energy Use 10%

The U.S. iron and steel industry will have to use 10 percent more energy than it now employs in order to comply with federal and state pollution control laws. This was the major finding of a study commissioned by Commerce's Office of Environmental Affairs.

The report, prepared by Resource Planning Associates, analyzes the energy requirements of the four major components of pollution control in steelmaking: in-plant air pollution, in-plant water pollution, pre-plant pollution control, and post-plant solid waste disposal.

To meet existing pollution control standards the industry will have to expend about 323 trillion BTU's annually. It currently uses about 3,115 trillion BTU's per year for manufacturing processes.

These estimates assume compliance with 1983 water pollution control standards, present visible emission air pollution control standards, and current solid waste disposal requirements. The figures also assume use of current technologies for solid waste disposal and thermal pollution control.

In addition, the report forecasts an increase in the annual pollution control requirement due to increasing production levels to 366 trillion BTU's per year in 1977 and 395 trillion BTU's by 1983.

In May 1975, the Secretary of Commerce directed OEA to develop specific estimates of the amount of energy required by four energy-intensive industries to comply with existing pollution control standards: iron and steel; fossil fuel-fired electric generating; pulp and paper; primary aluminum. This is the first of the four industry studies to be completed.

Energy Requirements for Environmental Control in the Iron and Steel Industry (PB-249 960), is available from NTIS, Springfield, Va. 22161, for $7.50 ($2.25 for microfiche).

Continuing Upswing In U.S. Sales Follows Consumer 'Fortnight' In Hong Kong

Hong Kong's "American Fortnight," a broad-based promotion last fall of consumer and industrial products from the United States, is still developing sales for U.S. and Hong Kong firms.

The latest compilation by the organizations participating in this city-wide event shows a total of more than $20 million in sales: $8 million resulting from an industrial exhibition; $3 million from a consumer goods show; almost $2 million from six in-store promotions; $2.5 million from 500 consumer outlets associated with the Fortnight; another $1.5 million from ten food promotions; and about $4 million from hotel services and restaurant events.

One of many "success stories" emerging from the Fortnight was the million-dollar sale of Kohler bathroom fixtures to Hopewell Construction Co. Ltd.

The Fortnight, organized by the American Consulate General and the American Chamber of Commerce in Hong Kong, featured the products of 70 U.S. exhibitors and 160 companies at department stores, supermarkets, restaurants, hotels, fashion shows and entertainment centers. Cultural, sporting, and entertainment personalities drew the crowds—conservatively estimated at 1.6 million—to the trade and commercial exhibitions. Among the attractions were the Kilgore Texas Rangerettes; Miss America of 1975, Shirley Cothran; and singer Nancy Wilson.

Assistant Secretary of Commerce Travis E. Reed, who headed a delegation of commercial officials opening the Fortnight, said it was "an indication of America's faith in Hong Kong's free-trading future and a symbol of the determination of the United States to strengthen its trading relationships with this very important part of the world. (The Fortnight was) the year's largest U.S. trade promotion in East Asia."

The concept represented an unprecedented saturation campaign to keep American products, technology and personalities in the limelight extensively in one area, and thereby to build up a receptive trade atmosphere. An earlier such event in Hong Kong had taken place in 1973.

The U.S. Departments of Commerce, State, Agriculture and the U.S. Information Agency provided financial and technical support. Commerce Department assistance was centered on in-store promotions at five of Hong Kong's largest department store chains and one boutique; Wing On, Shui Hing, Sincere, Dragon Seed, Crane, and Mode Elite. Purchases from the U.S. by these stores specifically for the promotion totaled $1.9 million.

All of the stores increased sales of U.S. products during the Fortnight, and have been able to sustain the increases significantly. The manager of Mode Elite, commenting on the continuing upswing, noted that poor sales resulting from the recession in 1975 were "turned around" with the start of the American Fortnight. Her company's sales have increased dramatically—40 percent—and this trend is expected to continue for some time.

Wing On, Hong Kong's largest chain, has expanded its sale of U.S. goods 26 percent; Sincere, 19 percent; Crane and Dragon Seed, each 10 percent. The U.S. Consulate estimates that if these percentage increases are maintained, the Fortnight over the long term will stimulate more than $2 million in U.S. sales.

For the fall event, Wing On had purchased electrical appliances, furniture, ladies' wear, housewares, gift items, and jewelry. Best selling products were silverware and glassware. Among Shui Hing's largest purchases were apparel, linens, drapes and rugs, jewelry, novelties, toys and games. Its best selling item was women's apparel. Dragon Seed bought the largest amount of all participating stores, mainly in men's and women's apparel—which constituted its best selling U.S. merchandise. It also bought and sold large amounts of furnishing fabrics, furniture, lighting fixtures, and bedding.

U.S. Commercial Attache Wyatt Martin, co-director of the Fortnight, says it has strengthened trade links with Hong Kong which have existed for a long time.

INSIDE, OUTSIDE—*U.S. products and signs were everywhere during the American Fortnight in Hong Kong. Above, left, inside Shui Hing department store; right, outside Wing On department store; center, one of many newspaper ads describing U.S. products that were on display for purchase by eager buyers. Reports five months later show sales still gaining.*

U.S. Share Of Manufactured Exports Climbs Sharply In Third Quarter

The U.S. share of world exports of manufactures, excluding shipments to this country, climbed sharply in the third quarter of 1975 to 21.9 percent. In posting this gain of 1.3 percentage points from the second quarter, the U.S. position reached its highest level in nearly six years.

Among the individual commodity groups, the largest increase in the U.S. share occurred in transport equipment, where trade is typically volatile. There was a sharp rebound from declines in the two previous quarters to 30.3 percent. In addition, sizable increases were recorded in U.S. shares of world exports of chemicals, basic manufactures and miscellaneous manufactured articles. This country's share also moved up moderately in nonelectric and electric machinery.

The general strengthening in the U.S. standing was attributable both to the sluggish sales by this country's competitors and to a sizable advance in U.S. shipments. U.S. exports of manufactures advanced by four percent in July-September, more than twice the rate of gain posted in the previous quarter. Exports from the other leading suppliers of manufactures, however, continued to grow slowly in value in the third quarter because of the lack of widespread improvement in economic activity, especially within Europe, and the weakening of inflationary pressures on prices. Exports from this country's competitors as a group, adjusted for seasonal variation and exchange rate changes, showed little change from the April-June period. Foreign sales by Germany, Belgium-Luxembourg, and the Netherlands, however, declined in value. Shipments from Switzerland and Italy, in contrast, were relatively stronger than those from the U.S.

Expanded exports of transport equipment made by far the major contribution to the increases posted in U.S. manufactured exports over the second quarter and also to the increased U.S. share of world manufactures. U.S. deliveries of transport equipment climbed by 15 percent, led by exports of aircraft and of passenger cars to Canada. Foreign sales by the other suppliers as a group rose much more slowly. In fact, those of several countries, notably the Netherlands and Japan, posted sizable losses.

U.S. exports of other types of manufactures were considerably less buoyant than those of transport equipment, but for the most part our sales were relatively better than those of our competitors. U.S. electric and nonelectric machinery exports, although showing only modest increases in value in the third quarter, nevertheless advanced slightly faster than those of the other suppliers. Modest increases were recorded in sales of the most important U.S. export items—computers and power generating machinery. Although the United States posted small increases in machinery shares, Italy, France, and the United Kingdom exceeded the U.S. export pace in nonelectric machinery, while in electric machinery, exports from Japan and Italy rose faster. U.S. shipments of chemicals slipped marginally, but the foreign sales of many of the other suppliers declined at a greater rate.

In this quarterly report, data formerly shown as "other manufactures" have been separated for the first time into two categories—"basic manufactures" and "miscellaneous manufactured articles." The separation of values was made in order to show the U.S. position in world exports of these two quite different types of products. Basic manufactures (SITC Section 6) includes semimanufactures of various materials, such as metal, textiles, wood, glass, leather, and rubber, and certain finished products of metal. The other category (SITC Section 8) mainly covers nondurable consumer goods and professional and scientific instruments.

U.S. SHARE OF WORLD EXPORTS OF MANUFACTURES

Adjusted for seasonal variation

Commodity	U.S. exports (million dollars)	U.S. share* (% based on export-weighted exchange rates[1])
Manufactures, total		
1973	45,574	19.5
1974	64,559	20.3
1973 1st qtr.	10,010	19.2
2nd	10,898	19.3
3rd	11,732	19.2
4th	13,035	20.2
1974 1st	14,273	20.4
2nd	15,825	19.8
3rd	16,861	20.1
4th	17,737	20.9
1975 1st	17,359	20.7
2nd	17,678	20.6
3rd	18,399	21.9
Chemicals		
1973	5,781	19.0
1974	8,891	18.5
1973 1st qtr.	1,230	18.5
2nd	1,343	18.7
3rd	1,501	18.5
4th	1,717	20.5
1974 1st	2,027	19.5
2nd	2,183	17.9
3rd	2,355	17.8
4th	2,332	18.9
1975 1st	2,333	19.8
2nd	2,103	19.3
3rd	2,096	21.2
Nonelectric machinery		
1973	12,212	25.1
1974	16,811	26.4
1973 1st qtr.	2,718	25.2
2nd	2,916	25.0
3rd	3,221	25.2
4th	3,412	25.4
1974 1st	3,639	25.8
2nd	3,987	26.5
3rd	4,434	26.3
4th	4,802	27.1
1975 1st	4,953	27.0
2nd	5,302	27.4
3rd	5,329	27.7
Electric machinery		
1973	5,094	21.6
1974	7,156	23.1
1973 1st qtr.	1,139	21.9
2nd	1,220	21.6
3rd	1,324	21.3
4th	1,413	21.7
1974 1st	1,606	23.0
2nd	1,743	22.6
3rd	1,925	23.8
4th	1,890	22.8
1975 1st	1,872	22.7
2nd	1,929	22.3
3rd	1,955	22.6
Transport equipment		
1973	10,813	27.0
1974	14,583	29.2
1973 1st qtr.	2,472	27.4
2nd	2,614	26.7
3rd	2,640	25.6
4th	3,084	28.0
1974 1st	3,153	30.2
2nd	3,522	27.7
3rd	3,697	28.8
4th	4,268	30 5
1975 1st	3,854	28.0
2nd	4,126	26.6
3rd	4,749	30.3
Basic manufactures		
1973	7,475	11.4
1974	11,506	12.3
1973 1st qtr.	1,524	10.8
2nd	1,745	11.2
3rd	1,983	11.5
4th	2,223	12.0
1974 1st	2,560	12.7
2nd	2,922	12.3
3rd	3,012	12.0
4th	3,012	12.2
1975 1st	2,835	12.1
2nd	2,760	12.1
3rd	2,772	12.8
Miscellaneous manufactured articles		
1973	4,236	16.0
1974	5,627	17.3
1973 1st qt.	927	15.7
2nd	1,060	16.5
3rd	1,063	17.5
4th	1,186	16.5
1974 1st	1,288	17.5
2nd	1,468	17.8
3rd	1,438	17.0
4th	1,433	17.0
1975 1st	1,512	18.0
2nd	1,458	17.1
3rd	1,498	17.6

Note: The term "manufactures" refers to chemicals, machinery, transport equipment, and other manufactures except mineral fuel products, processed food, fats, oils, firearms of war, and ammunition. World exports are defined as exports from the 15 major industrial countries. Percentage shares are based on values excluding shipments to the United States. These nations, which account for 80 percent of world exports of manufactures to foreign markets, are: United States, Austria, Belgium-Luxembourg, Canada, Denmark, France, Federal Republic of Germany, Italy, Netherlands, Norway, Sweden, Switzerland, United Kingdom, and Japan.

* Of world exports to foreign markets.

[1] Shares are based on exports of the six commodity groups from each of the 15 countries, using the official rates of exchange during each period vis-a-vis 67 principal markets.

Official Trade Briefs

This article is another in a series of reports that describes actions affecting world trade, as compiled by the Legislative and Tariff Policy Division of the International Economic Policy and Research Bureau's Office of International Trade Policy.

THE PRESIDENT

In the first affirmative action taken under the escape clause provisions of Section 201 of the Trade Act of 1974, the President has determined to grant import relief to the specialty steel industry. The President has directed the Special Representative for Trade Negotiations to attempt to negotiate orderly marketing arrangements with key suppliers. These arrangements would remain in effect for three years. If the marketing arrangements are not negotiated successfully by no later than June 14, the President will impose three-year import quotas, at levels comparable to those recommended by the International Trade Commission. Since the President is not granting the relief recommended by the ITC, Congress has 90 days to override this decision and institute the quotas recommended by the Commission (see *Commerce America*, March 1).

In another Section 201 decision, the President decided not to grant import relief to U.S. asparagus producers. The International Trade Commission (ITC) had split 3-3 in determining whether domestic producers were seriously injured by imports. Under the provisions of the Tariff Act of 1930, in cases of a divided vote, the President may accept either finding as the basis for his decision to grant or not to grant relief.

The President on Feb. 26 issued Executive Order #11906 which updated and revised Executive Order #11888 implementing the U.S. Generalized System of Preferences (GSP). The revisions were necessitated primarily by application of the competitive need limitations. These limitations exclude from GSP eligibility products from a country the imports of which exceeded $26.6 million or 50 percent of total U.S. imports of the product in 1975. Also, faced-finished plywood was determined to be import sensitive and was deleted from the eligible products. Executive Order #11906 was published in the *Federal Register* Feb. 27. (For further information on GSP, see *Commerce Today*, Dec. 8.)

The President on March 1 sent a letter to Congress stating his intention to withdraw the designation of Laos as a GSP beneficiary due to its political status.

CONGRESS

Bills Passed—Senate: By a unanimous vote of 97 yeas, the Senate passed S.22 to provide for a general revision of the copyright laws. Similar legislation is pending in the House. By a vote of 60 yeas to 30 nays, the Senate passed S.2662, the proposed International Security Assistance and Arms Export Control Act. This Act would limit the sale of arms by private U.S. firms to foreign countries. This bill and the House-passed bill are now being reconciled.

Bills Reported—Senate: The following bills were reported favorably to the Senate: S. Res. 403, stating the sense of the Senate that the State Department express concern to the Canadian Government that supplies of **potash** for American agriculture not be disrupted; H.R. 9721, to provide for increased participation by the United States in the Inter-American Development Bank; and S 953, to amend the Export Administration Act of 1969 to clarify and strengthen the authority of the Secretary of Commerce to take action in the case of restrictive trade practices or boycotts.

Bills Postponed—Senate: The Senate indefinitely postponed consideration of S. Con. Res. 80 which related to the International Monetary Fund and the transfer of gold.

Committee Hearings—Senate: The Committee on Commerce resumed its hearings on prospects for East-West Trade and heard testimony from the Comptroller General of the United States, a senior Soviet economics specialist from the Library of Congress, and academic witnesses. The hearings were recessed subject to call. The Subcommittee on International Finance and Resources of the Committee on Finance concluded hearings on causes and cures of world inflation. The Subcommittee on Foreign Commerce and Tourism concluded hearings on S.2839, a bill to supplement the authority of the Secretary of Commerce to systematically collect, analyze and publish information on foreign investments in the United States and American investments abroad.

Committee Hearings—House: The Subcommittee on Trade of the Committee on Ways and Means held hearings on various bills to provide duty-free entry, temporary or partial suspensions of duty, and certain changes in tariff classifications. The Subcommittee approved for full committee action the following bills:

H.R. 2177, to amend the Tariff Schedules of the United States (TSUS) to provide for a partial exemption from duty **articles previously exported** from the United States, composed in part of fabricated components that are United States products, when returned after having been exported, without having been advanced in value or improved in condition while abroad; H.R. 2181, to provide duty-free treatment of any **aircraft engine** used as a temporary replacement for an aircraft engine being overhauled within the United States if duty was paid on such replacement during a previous importation; H.R. 8656, to provide for the duty-free importation of **loose glass prisms** used in chandeliers; H.R. 9401, to continue to suspend for a temporary period the import duty on certain **horses**; H.R. 11259, to lower the duty on **levulose** until the close of Dec. 31, 1977; H.R. 11321, to suspend until July 1, 1977, the duty on certain **elbow prostheses** if imported for charitable therapeutic use, or for free distribution, by certain public or private nonprofit institutions; H.R. 11605, to suspend for a 3-year period the rate of duty on **mattress blanks of rubber latex**; H.R. 12033, to continue until the close of June 30, 1979, the existing suspension of duties on **manganese ore** (including ferruginous ore) and related products; and H.R. 12254, to suspend the duties on certain **bicycle parts and accessories** until the close of Dec. 31, 1979. The Subcommittee on Trade also held a hearing on authorization of appropriations for and on oversight of the U.S. International Trade Commission, and met in executive session with ITC members.

The Subcommittee on Courts, Civil Liberties and the Administration of Justice of the Committee on the Judiciary met for markup of H.R. 2223 which provides for the general revision of the Copyright Law. The Subcommittee on International Economic Policy of the Committee on International Relations held a hearing on the impact of the multinational corporation on the world economy. The Subcommittee on International Trade, Investment and Monetary Policy of the Committee on Banking, Currency and Housing met for a briefing on the International Monetary Fund by Treasury Under Secretary Edwin Yeo.

Joint Conferences: A joint conference committee met to resolve the differences between the Senate- and House-passed versions of H.R. 200 which would establish a 200-mile fishing limit on a temporary basis. The conferees agreed to March 1, 1977, as the date which the new limit is to be effective. The bill with the conference committee changes is expected to be approved by Congress and signed by the President in the very near future.

New Legislation: In the second session of the 94th Congress, 50 trade and related bills have been introduced. Bills not previously reported in this column include: H.R. Res. 793, regarding the conduct of recent negotiations concern-

ing the International Monetary Fund (IMF) and the position of the United States with respect to future sales of IMF gold and a proposed trust fund; H.R. 11659, 11693, 11699, 11855, 12031, 12218, and 12301, to amend the Tariff Schedules of the United States to repeal the special tariff treatment accorded to **articles** assembled abroad with components produced in the United States; H.R. 11911 and 11796, to provide for the free entry of certain **operatic sets** for the Lyric Opera of Chicago; H.R. 11694, to reduce for a 5-year period the duty on certain **soccer uniforms;** H.R. 11827 and 12148, to amend the Export Administration Act of 1969 to strengthen the anti-boycott provisions of such act and to amend the Securities Exchange Act of 1934 to enhance disclosure provisions of that act;

H.R. 12033, to continue until the close of June 30, 1979, the existing suspension of duties on **manganese ore** (including ferruginous ore) and related products; R.H. 12103, to provide for Federal regulation of participation by foreign banks in domestic financial markets, and to strengthen supervision of domestic institutions engaged in international banking; H.R. 12183, to provide that the President, or any other member of the executive branch of the Federal Government, shall limit or prohibit the export of **agricultural tools, materials, and machinery** as part of any limitation or prohibition of the export of any agricultural commodity; H.R. 12244, to make specific provisions for **ball or roller bearing pillow block, flange, take-up, cartridge, and hanger units** in the TSUS; H.R. 12254, to suspend the duties on certain **bicycle parts and accessories** until the close of December 31, 1979; H. Res. 1061, to develop a multilateral code of conduct to eliminate bribery and other practices which burden multinational corporations;

H.R. 12320, to suspend for a 1-year period the duty on certain **racing shells and cars;** H.R. 12488, to require that imported **meat and meat food products** made in whole or in part of imported meat be labeled "imported;" to provide for the inspection of imported **dairy products;** to require that **imported dairy products** comply with certain minimum standards on sanitation, and to require that imported dairy products be labeled "imported"; S.J. Res. 161, regarding the conduct of recent negotiations concerning the IMF and the position of the United States with respect to future sales of IMF gold and a proposed trust fund; S. 2921, to amend the Tariff Act of 1930 to increase the dollar value of merchandise eligible for informal entry and to change certain bonding requirements; S.3084, to extend the Export Administration Act of 1969; S.3101, to provide for increased participation by the United States in the International Finance Corporation; S.3103, to provide for increased participation by the United States in the Asian Development Fund.

INTERNATIONAL TRADE COMMISSION

The Commission recently announced three findings in import relief cases—an affirmative, a negative and a split decision. In the affirmative finding, the Commission found that increased imports of **mushrooms** are causing serious injury to domestic producers. The Commissioners were divided concerning the type of relief to be recommended—three Commissioners supported adjustment assistance, two supported import quotas. The President must decide by May 17 what type of relief to grant. The Commission divided 3-3 on whether there was serious injury in the investigation concerning **slide fasteners (zippers).** The President may consider either position as the official finding of the Commission on which to base his decision whether to grant relief. The President must make the decision on or before April 19. The Commissioners who voted to find serious injury caused by imports recommended that adjustment assistance be granted. The Commission reached a negative decision in the investigation concerning **gloves.** A majority of the Commissioners found that increased imports were not seriously injuring the domestic glove industry.

A public hearing in connection with the investigation of **honey** will be held in Kansas City, Mo., on April 6. Hearings have already been held in San Francisco.

Antidumping Cases: Upon receipt of advice from the Treasury Department that **water circulating pumps** from the United Kingdom are being or are likely to be sold at less than fair value (LTFV), the Commission instituted an investigation to determine whether such sales are injuring the U.S. industry. A hearing in conjunction with this investigation will be held in Washington on April 15.

Section 337—Unfair Trade Practices: The Commission announced resumption of investigation No. 337-TA-18 on **monolithic catalytic converters.** Three investigations were terminated. The investigation concerning **electric pianos** was terminated based on the Commission's determination that there is no violation of section 337 of the Tariff Act of 1930 due to a settlement agreement entered into by the parties. The terminations of the investigations concerning **certain high fidelity audio and related equipment** and **record players** incorporating straight line tracking systems were also based on the conclusion of settlement agreements.

TREASURY DEPARTMENT

Antidumping Cases: The Department issued a dumping finding with respect to birch **3-ply doorskins** from Japan. The finding of dumping automatically follows a finding of LTFV by the Treasury Department and a finding that sales at LTFV are injuring the domestic industry concerned. Dumping duties will now be assessed. Imports of the doorskins from Japan were about $8.7 million in 1975.

The Department announced its finding of sales at LTFV in the case concerning **water circulating pumps** from the United Kingdom. The case has been referred to the ITC for a determination of whether a U.S. industry is being injured by such sales.

The Department has also announced the withholding of appraisement on **ski bindings** from Austria, West Germany and Switzerland and on **hollow or cored ceramic brick and tile** from Canada. If it is found that dumping has occurred, dumping duties will be assessed on imports of the subject products which entered the United States after withholding of appraisement announcements. The Department is extending for 3 months the investigatory period on **knitting machinery for ladies' seamless hosiery** from Italy. A decision concerning sales at LTFV must now be made on or before May 15. The Department also instituted an investigation regarding **automobile body dies** from Japan.

Countervailing Duty Cases: The Department announced its final affirmative determination that bounties or grants are being paid on imports of **hydrogenated castor oil and 12 hydroxystearic acid** from Brazil. An additional duty of 11.3 percent will be imposed on these products. Affirmative preliminary decisions were reached in the case involving **glass beads** from Canada and **cap screws** from Italy. Final decisions in these cases are due Aug. 25 and Aug. 11, respectively. A countervailing duty investigation was initiated concerning **vitamin K** from Spain. Imports of vitamin K from Spain totaled approximately $15,000 in 1974.

COMMERCE DEPARTMENT

Adjustment Assistance—Firms: The Department announced approval of the guarantee of a $3 million trade adjustment assistance loans for Deansgate, Inc., a manufacturer of **men's suits, sports coats and trousers,** injured by competition from imports. The firm will use the proceeds of the loan to provide working capital in connection with an adjustment program aimed at regaining its U.S. competitive market position.

In a report to the President, the Department stated that firms producing **specialty steel** may become eligible to apply for trade adjustment assistance although none had yet applied. The report, made as a result of a study conducted pursuant to provisions of the Trade Act of 1974, added that firms affiliated with major steel companies are diversified or are affiliated with firms

in other industries and are not likely to be able to show that increased imports of specialty steels caused a decline in their production. Therefore such firms would not meet the criteria for certification of adjustment assistance eligibility.

LABOR DEPARTMENT

Adjustment Assistance—Workers: The Department certified workers at several firms as eligible to apply for trade adjustment assistance. The Department found that these workers have become unemployed as a result of increased imports. The workers certified had been employees at the following firms: 457 workers of United States Shoe Corp., Columbus, Ohio, and Crothersville, Ind. **(women's non-rubber footwear);** 30 workers of Arrow Clothes, Inc., and Andrew Pallack & Co., Inc., New York **(men's suits);** 20 workers of Baxter Stores, Inc., Trenton, N.J. **(men's suits);** 200 workers of Florsheim Shoe Co., North Adams, Mass. **(men's footwear);** 20 workers of Majestic Sweater Mills, Inc., Philadelphia **(men's and boys' sweaters);** 400 workers of Ed White Jr. Shoe Co., Paragould, Ark. **(women's footwear);** 200 workers of International Silver Co., Meriden, Conn. **(stainless steel flatware);** 35 workers of Fairfax Mfg. Co., Mound City, Mo. **(silver plated flatware and dresser valets);**

Also, 550 workers of Allegheny Ludlum Steel Corp., Dunkirk and Watervliet, N.Y. **(specialty steel);** 20 workers of Sperry UNIVAC, N.Y. **(punch nd die assemblies);** 360 workers of Dynamic Instrument of Puerto Rico, Lajas, P.R. **(AC adapters);** 90 workers of Thermatomic Carbon Co., Sterlington, La. **(carbon black);** 80 workers of E. L. Bruce Co., Inc., Covington, Tenn. **(prefinished hardwood plywood and wood molding);** 60 workers of International Shoe Co., St. Clair, Mo. **(men's and women's shoes);** 270 workers of United States Shoe Corp., Marionville, Mo. **(children's shoes);** 100 workers of Carthage Marble Corp., Carthage, Walnut Grove and Kansas City, Mo. **(marble blocks, slabs and sheets);** 685 employees of Brown Shoe Co., Sullivan and Murphysboro, Ill. **(women's footwear);** 300 employees of General Electric Co., Owensford, Ky. **(electronic receiving tubes and mounts);** in addition, 70 workers of Leverenz Shoe Co., Sheboygan, Wis. **(men's footwear);** 40 workers of Bergman Tool Mfg. Co., Inc., Buffalo **(battery service tools);** 200 workers of Richard Shoe Co., Culver City, Calif. **(women's footwear);** 40 workers of Quality Components, Inc., St. Mary's, Pa. **(electrical equipment);** 4 workers of Frank Scolaro Marble Co., Inc., Bronx, N.Y. **(finished marble and granite);** 1120 workers of Universal-Cyclops Specialty Steel Div., Budgeville, Aliquippa, Pittsburgh and Titusville, Pa., and 150 workers of Teledyne, Vasco, East Latrobe, Pa. **(specialty steel);** 215 workers of International Hat Co., Oran, Mo. **(hats and hat caps);** 1180 workers of International Harvester Co. Truck Division, Springfield and Shadyside, Ohio and Indianapolis, Ind. **(pickup trucks);**

The following workers engaged in manufacturing **men's clothes:** New York City—40 workers of Harry Irwin, Inc., 25 workers of Primo Coat Corp., 20 workers of Catania Clothes Corp., 2 workers of A.S. Mines, Inc., 10 workers of Lefeton Custom Tailors, 2 workers of M. Kopp, Inc., 1 worker of Saint Laurie, Ltd., 17 workers of Manhattan Coat Corp., 5 employees of Everett Levinsohn Corp., 6 workers of Sidmar Clothing Co., Inc., 20 workers of V. Cale-Cantania Clothing, Ltd.; Brooklyn—85 workers of Gulant and Maslin, Inc., 180 workers of Robert Hall Mfg. Co., 5 workers of M'Sieur Slacks, Inc., 95 workers of Eagle Clothes, Inc., and Salbod, Inc., 60 workers of Albex Contractors, Inc., 40 workers of Fine Craft Coat Co., Inc., 25 workers of Howard Clothes Corp.; 10 workers of Imperial Pants Co., Inc., 10 workers of Eagle Pants Co.; Long Island City—20 workers of Brookfield Clothes, Inc., 5 workers of Shop Contracting Corp., 5 workers of Sabel and Schaps Co;

Philadelphia—15 workers of Teplick Clothes, Inc., 70 workers of Scotese Clothiers, 400 workers of Lawrence Clothes, Inc., 125 workers of Cross Country Clothes, Inc., 90 workers of DeLuca Sportswear and Co., 40 workers of A. Guaracino and Sons, 5 workers of Max Golden and Sons, Inc., 30 workers of Fashion Maid Knitting Mills, Inc., 65 workers of Fulton Clothes Co., Inc., 140 workers of Karl D. Clothing Mfg. Co., 90 workers of Stanley Blacker, Inc., Coordinated Trousers, Inc., and Patgat Clothes, Inc.; 10 workers of the Puritan Co., Lansdale, Pa.; 100 workers of Hilton Mfg. Co., Linden, N.J.; 400 workers of William B. Kessler, Inc., Hammonton, N.J.; 120 workers of Cape Cod Sportswear, Inc. and 90 workers of Deerfield Mfg., Inc., New Bedford, Mass.; 90 workers of L. Grey & Bros., Baltimore; 100 workers of Middleburg Mfg. Co., Hanover, Pa.; 250 workers of Lion Mfg. Co., Everett, Pa.; 170 workers of Bellwood Mfg. Co., Bellwood, Pa.; 60 workers of Verona Mfg. Co., Verona, Va.; 450 workers of Staunton Mfg. Co., Staunton, Va.; 85 workers of G&H Mfg. Co., Fredericksburg, Va.; 100 workers of M. Ethrenberg Sons, Inc., Passaic, N.J.; 60 workers of Hudson Pants Co., Inc., Jersey City; and 80 workers of New Jersey Sportswear Co., Inc., Clifton, N.J.

Adjustment assistance was denied to workers at the following firms: Berne, Inc. **(electronic components);** Wayne-Gossard Corp., Jackson, Mo. **(women's hosiery);** Rob-Scot Knitting Mills, Philadelphia **(girls' sweaters);** International Harvester Co., Fort Wayne, Ind., and San Leandro, Calif. **(heavy-duty trucks);** Air Products & Chemicals, Inc., Wilkes-Barre, Pa. **(cryogenic tanks);** United States Steel Corp., Gary, Ind. **(carbon and stainless steel sheet and strip and tin mill products);** American Safety Equipment Co., Medina, Ohio **(seat belts and crash helmets);** Airco Vacuum Metals, Berkeley, Calif. **(stainless steel ingots);** Benzenoid Organics, Inc., Bellingham, Mass. **(textile dyes);**

International Resistance Co., Burlington, Iowa **(electronic resistors);** Ford Motor Co. plants in Dearborn, Mich., Woodhaven, Mich., Walnut Hills, Ohio, Buffalo and Chicago Heights, Ill. **(tools, dies, jigs and fixtures);** Ollie Moore Mfg. Co., Perryville, Mo. **(women's clothing)** and the following **men's clothing** firms: Premier Clothing Co., New York; Stetson Dee Clothes, Inc., Baltimore; McKay Mfg. Co., Manchester, N.H., W. Seitchik & Sons, Inc., Philadelphia; Spilton Bros., Inc., Mr. Ned, Inc., Dell Clothing Co., and B. Glanzrock, Inc., New York; Malcolm Kenneth Co., Dorchester, Mass.; William P. Gredmen & Bros., Inc., and Labeento Clothing, Inc., Brooklyn; Lanhem Clothes, Inc., Lawrence, Mass.; Byron Clothing Mfg. Co., Somerville, Mass.; Charles Liebman & Brother, Inc., Philadelphia; Arrow Co., Corinth, N.Y.

Investigation—Workers: Investigations to determine eligibility for adjustment assistance were instituted on behalf of about 60 firms.

INTERNATIONAL

Foreign Antidumping Actions: Revenue Canada has found that **mirror tile** originating in the United States is being dumped into Canada and that the actual or potential volume is not negligible. As a result, a provisional duty will be assessed on imports of tiles into Canada until the Anti-dumping Tribunal decides whether there has been material injury to the Canadian industry.

The Canadian Anti-dumping Tribunal has concluded that the dumping of **yeast** into Canada by Anheuser-Busch has not resulted in material injury to Canadian producers. This case is thus terminated and any provisional duties paid upon entry into Canada will be refunded. Revenue Canada has initiated antidumping investigations regarding **9-Lives cat foods,** a product of Quaker Oats Co., and **scholastic and award rings** produced by Josten's, Inc.

The British Department of Trade has accepted a complaint alleging the dumping into the U.K. of **single beam atomic absorption spectrophotometers.** The allegedly dumped articles were exported to the U.K. by Instrumentation Laboratory, Inc. of Wilmington, Mass.

Aviation Equipment Mission Explores Airport Development Plans In Africa

Airport development plans in Nigeria, Ethiopia, and Botswana prompted the Commerce Department early this year to send a trade mission to the three countries to explore their markets for aviation and ground support equipment. The mission members' appraisal points to sales opportunities well worth pursuing.

Nigeria's airport construction program for 1976-80 provides for the building of 17 airports, of which at least three are to meet international standards to accommodate 747 or larger aircraft. The country's oil-fed economic boom signals a strong import potential. Despite its impressive size and growth possibilities, however, the market is not an easy one in which to do business—methods of operation endemic to Nigeria and current political uncertainties must be considered. The point was emphasized by mission member T.D. Shepherd, the Collins Radio Group representative, who said: "This mission has given exposure to the airport development program in Nigeria, and business potential is very large; however, much dedicated effort will be required to acquire contracts and effectively perform in the current environment." Other participants shared Shepherd's view on the need for careful and persistent follow-up action. They agreed that the role of consulting organizations to the Federal Ministry of Civil Aviation must be taken into account. These organizations —which include NACO, a Netherlands airport construction consultant firm, and TELCOM, Inc., of Vienna, Va., both with offices in Lagos—review contract proposals for the Ministry and provide technical advice.

Another point stressed was that in-place packaged plant delivery dates should be made only after a thorough assessment of: Nigerian port and freight handling facilities, medium- and long-term financing, and the possible effects a sudden change in government might have on such commitments. Price, credit, quality, after-sales service, training and promptness of delivery will continue to influence purchase decisions.

Herbert J. Cummings, who headed the mission for the Commerce Department, feels that the participants' plans to follow up on the leads developed indicates a determination by U.S. companies to "deal with existing realities in Nigeria, however formidable they may appear at present."

Ethiopia's plans reviewed

Various government officials responsible for planning and carrying out Ethiopia's program for airport development welcomed the U.S. group in Addis Ababa. The director of Ethiopia's Civil Aviation Administration reviewed the program's needs for the 1976-80 period—involving an estimated $7 to $10 million worth of imports. He placed special emphasis on Ethiopia's desire to buy quality products: "Ethiopians don't want cheap equipment and don't want price at the expense of quality," he said.

The Botswana market is small, but a specific if modest program for airport development is under way under the direction of the Minister of Works and Communications. Botswana is currently one of the world's largest producers of diamonds, and this valuable source of export earnings is expected to provide financing for many of the country's pragmatic development programs, including airport improvement, Director Cummings observed.

Seven-member group

Members of the mission, and the companies represented, were: M.F. Biggs, Sr., E-Systems, Montek Div., Salt Lake City; Robert G. Davis, Texas Instruments, Dallas; Paul McGeorge, GTE-Sylvania/ Syltec, Waltham, Mass.; Calvert F. Phillips, Westinghouse Defense and Electronic Systems Center, Baltimore; James E. Rudd, Cardion Electronics, Div. of General Signal Corp., Woodbury, N.Y.; T. D. Shepherd, Collins Radio Group, Dallas; and Donald Teeples, International Technical Products Corp., Washington, D.C.

IN BOTSWANA—*A welcome sign with a Western look greeted the aviation equipment trade mission members as they arrived at their 2-day headquarters in the country's capital, Gaborone.*

Nigeria Alters Tender Rules; Firms Now Must Be Registered

The Nigeria Federal Tenders Board, in order to expedite priorities under the Third National Development Plan 1975-80, has announced discontinuance of the practice of open competition tendering for large construction projects. From now on the practice of selective tendering will prevail, whereby the Tenders Board will invite only registered companies to bid on major projects. U.S. companies interested in and capable of initiating and completing major construction projects in Nigeria are therefore encouraged to register first with the Permanent Secretary, Business and Registration Board, Ministry of Trade, Broad St., Lagos, and then with the Registrar, Federal Works Registration Board, Federal Ministry of Works, Tafawa Balewa Square, Lagos. Capitalization requirements begin at $350,000. For further details and assistance, contact the Country Marketing Manager for Africa, U.S. Department of Commerce, Washington, D.C. 20230.

Washington Seminar Views European Business Prospects

The basic problems and key decisions that businessmen will face in Europe during the next 12-18 months will be appraised at a conference in Washington April 20-21. The European Business Forecast seminar will be chaired by Robert V. Roosa, Partner, Brown Brothers Harriman & Co. Speakers will include Ambassador Frederick B. Dent, U.S. Special Representative for Trade Negotiations, and Richard Garnitz, Acting Director of Commerce's Office of International Marketing.

Write School of Advanced International Studies, The Johns Hopkins University, Conferences for Corporation Executives, 1740 Mass. Ave., NW., Washington, D.C. 20036.

IN SINGAPORE—*Display products were demonstrated for visitors at the U.S. Regional Trade Center's exhibition of equipment for the health care industries.*

Medical Equipment Offers Favorable Prospects, Singapore Exhibitors Find

The thrust of health care programs in Singapore and neighboring countries is likely to be in improvement and modernization of basic services, rather than in higher technological levels. As health care in the region is subsidized to a large extent, technological demands will depend on the ability of each country's government to pay—a situation that does not point to greatly increased inputs of sophisticated medical equipment. However, U.S. exhibitors at a recent health care industries show in Singapore found sizable interest in their wide range of items.

At the U.S. Regional Trade Center event, 14 exhibitors representing 29 companies attracted prospective buyers from Malaysia, Thailand, and Indonesia as well as Singapore. Eight representatives were appointed during the show, and 34 are under negotiation.

X-ray apparatus, ultrasound cardiography equipment, diagnostic chemical analyzers, electrosurgical equipment, photometers, ultrasonic cleaning equipment, and internal function testing devices are among the products said to have the best sales potential. A patient transfer unit, wheelchairs, stretchers, simple patient lifts, cardiac pacemakers, integrated patient monitoring systems, fetal monitoring equipment, internal metal bone and joint implants, dialysis systems, and cystometers are among those having moderate potential.

Singapore as medical center

The Government of Singapore envisions the country as becoming the medical center of Southeast Asia—an exception to the limited technological demand mentioned earlier. As a first step, a general hospital with 1,350 beds is to be completed by 1980. This project will increase Singapore's imports of health care equipment—especially for radiotherapy, nephrology, neurosurgery, and cardiothoracic, plastic, and pediatric surgery. Construction of a centralized laboratory, with five fully equipped analytical facilities, is scheduled for 1978.

In Thailand, severe overcrowding and uneven quality of government health services has led to an unprecedented building boom of modern, usually high-priced private hospitals and clinics. This development can be significant for U.S. industry, because Thailand traditionally has favored U.S. technology; and servicing of U.S. equipment, while often inadequate, is superior to that of foreign competitors. In addition, the government has ambitious plans for expansion of health care.

Singapore and several neighboring countries with major programs to limit population growth are spending significantly to establish and equip rural family planning centers.

Points for U.S. suppliers

From the region, the most frequent complaint directed toward U.S. manufacturers is the lack of after-sales service and maintenance. U.S. suppliers are urged to offer better parts, service, and maintenance-training support.

The Singapore Government is progressing rapidly in implementing the metric system. Thus, U.S. suppliers are advised to provide metric-measure instruments.

Loan financing in the region is a problem, as the international institutions have not been active in the health field, and in the private sector, installment buying of equipment has only recently gained a degree of acceptance.

Japanese pricing tends to be extremely competitive in all comparable U.S. product lines. Singapore's traditional medical equipment suppliers, the British, are lagging in technology but are often very price competitive and still maintain a sizable, though declining, share of the market.

The exhibitors are estimating their sales as a result of the show at about $1.7 million in the next 12 months.

U.S. Firms Invited To Exhibit Medical Equipment In USSR

U.S. firms are invited by the Soviet Ministry of Health to participate in MEDICAL SYMPOSIUM '76, an exhibition of U.S. medical equipment, instruments, and materials, to be held at Sukhumi, Georgian Soviet Socialist Republic, in November. Firms wishing to qualify as one of about 20 participants should contact Dr. Julius Jambor, President, Jambor Enterprises, Inc., 90 West St., New York, N.Y. 10006; phone, 212-964-7630.

U.S. Metal Finishing Equipment Exhibition Draws Italian Buyers

Metal finishing in all of its varied aspects was presented recently at a Milan U.S. Trade Center exhibition, as 21 American companies displayed products demonstrating how modern technology offers optimum operational efficiency.

Hundreds of Italian end-users in the metallurgical (foundries/steel mills), chemical, automotive, electronic, aviation, household appliances, railway and shipyard industries visited the exhibition of metal finishing and surface treatment equipment. As it represented the only specialized exhibition in Italy in this product area, a number of the visitors requested a repeat show at least every two or three years.

The exhibition indicated that the metal finishing products with best sales potential include: degreasers; electro-cleaners; acid treatment equipment; ultra-sonic equipment; abrasive, grinding, honing, burring and buffing equipment; sandblast equipment and accessories; electroplating equipment; and measuring and testing equipment (for thickness, hardness, etc.). Paint spray systems and compressors, chemicals used in metal finishing, specialty paints and finishes, and pollution control equipment are considered to have moderate market potential. Related products not exhibited but with market potential are: specialty bath recycling equipment; pickling equipment and supplies; related health and safety equipment; and automated plating application, measuring and test equipment.

U.S. prices are generally higher than those quoted for similar Italian-made products. However, most U.S. products are without local competition and are either competitively priced with third country products or are of a higher technological level.

John Ulam, President of Clad Metals, Inc., Canonsburg, Pa., penetrating four country markets for the first time, predicted $500,000 worth of business during the next year, saying, "This show has produced many new contacts for sale of our products and also a possible joint-venture." Frederic Doughty, President of Acme Gear & Machine Co., Philadelphia, reinforced the favorable response by remarking, "Very satisfied with exposure."

Four of the participating firms were new names in Italy. Sales during the show totaled $275,000 and 12-month projections amounted to $3 million. One representative was appointed; two representatives and two joint venture agreements are expected to be signed in the next 12 months.

Transportation Equipment Show Set For Paris, 1977

An international exhibition and conference on advanced methods and innovation in surface transport—TRANSPORT-EXPO 77—will be held Apr. 19-24, 1977, at Le Bourget Airport, just outside Paris. The exposition will feature modern surface transportation equipment and components, both currently in use and still in the design or testing stage. The 1975 event registered 106 exhibitors from 13 countries. Some 8,500 visitors from 42 countries attended.

Interested U.S. firms should contact: TECHNOEXPO, 8, rue de la Michodiere, 75002 Paris; telex, 21550 Systele Paris, Ext. 135; telephone, 742-55-71; and/or the U.S. representative, French Trade Shows, French Chamber of Commerce in the United States, 1350 Avenue of the Americas, New York 10019. Applications received after Jan. 15, 1977, will be accepted only in accordance with space available.

Automated Printing Spurs U.K. Demand For U.S. Equipment

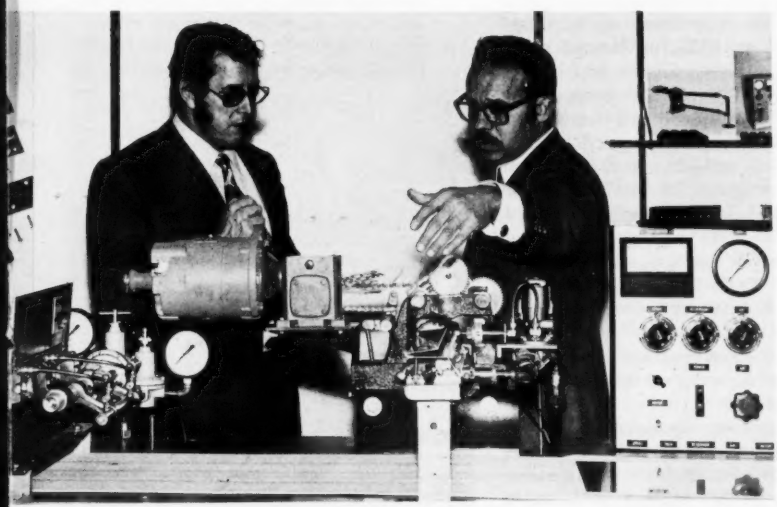
A recent printing and graphic arts equipment exhibition at the London U.S. Trade Center proved that, despite the United Kingdom's current economic problems, the British market remains one of the most fertile sources of sales for the U.S. exporter.

Strongest buyer interest was found in pre-press equipment, particularly in computerized typesetting and optical character recognition (OCR)—clear evidence that the revolution in automated printing, already common in the United States, had finally arrived in Britain. It so happened that during the show week a strike closed down every London daily newspaper.

The 27 U.S. exporters—24 of whom were new to the market—sold or projected 12-month sales at almost $20 million. Delegations from 20 foreign nations attended.

Compuscan Inc., a new-to-market exhibitor at first reluctant to participate, sold $500,000 worth of computerized editing and OCR equipment off the floor, and expects some $6 to $10 million additional in sales within a year.

Another new-to-market exhibitor, Alphatype Corp., acquired sales leads from which the firm hopes to gain a half million dollars' worth of business. The company quickly signed up for this month's printing show at the Paris U.S. Center.



IN MILAN—*During metal finishing and surface equipment exhibition at U.S. Trade Center, Frederic C. Doughty of Acme Gear & Machine Co. explains his metal-coating machinery to prospective buyer. At right is display by Campbell-Hausfeld Co.*

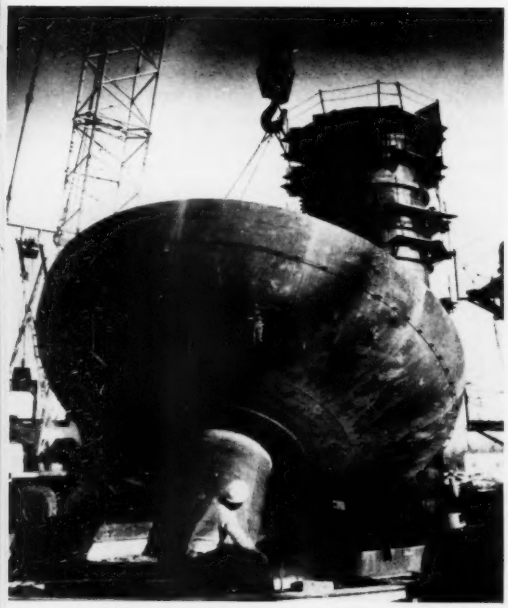
Worldwide Business Outlook

Canadian Economy Gets Lift From Rising World Demand

The Canadian economy appears to be headed for a recovery during 1976 from the recession that plagued it during the past year, reports Elden B. Erickson, Counselor for Commercial Affairs at the U.S. Embassy in Ottawa. Stimulated by rising exports and a revival in residential construction, the growth of real gross national product will range from 4.5 to 6 percent for 1976, according to economic and government forecasters, quite an improvement over the 0.2 percent recorded in 1975.

Inflation, at the high rate of 11 percent in 1975, is expected to slow down during the next 12 months, in part because of price and income controls imposed last October under the government's anti-inflation program, and also because of excess industrial capacity—about 15 percent. A high rate of unemployment, an average of 6.9 percent (new computation) of the workforce in 1975, is expected to continue even as the economy heads upward.

Consumer spending, which held up well in 1975 despite the economic downturn, is expected to remain modestly strong in 1976 as well. Higher wages and employment growth will lead labor income to a substantial increase next year, providing considerable stimulus to consumption outlays. However, discretionary consumer spending may grow more slowly because of the encroachment upon household incomes of sharp increases in rents, interest rates and property taxes, and the cost of electricity, heating oil and natural gas.



FOR CANADIAN PLANT—*This 15-ton "mushroom" is the bottom end of a distillation tower being assembled by Canadian Badger Co., Ltd., a Raytheon company. The tower is part of a styrene monomer plant that Badger is constructing for Polysar Ltd. in Sarnia, Ontario.*

Key factor in recovery

Most important for Canada's economic recovery in 1976 is the upturn now under way in the United States, Japan and Canada's other trading partners, which should lead to a significant reduction in Canada's trade deficit and help achieve a balanced trade in 1976. The increased demand for Canadian exports provided by recovery in these countries will stimulate the Canadian economy and should lead to strong imports as well.

In value terms, total exports in 1975 amounted to $32,755 million, up only 1.8 percent over 1974, but nevertheless the highest on record. Exports to the United States increased by only 0.7 percent to $21,468 million, and represented 65.5 percent of total global exports. Export gains, on a value basis, were mainly accounted for by whiskey, up $47.5 million; iron ore and concentrates, up $84.0 million; natural gas, up $598.6 million; fertilizers, up $38.3 million; nickel and alloys, up $30.5 million; passenger cars, up $225.5 million; trucks, up $45.8 million; and motor engines and vehicle parts, up $120.2 million. Notable export declines occurred in crude oil, down $355.3 million; lumber, down $149.6 million; copper and alloys, down $122.2 million; wood pulp, down $69.7 million; and zinc, down $46.1 million.

Imports also reached a record high in 1975 of $34,667 million, up 9.6 percent over 1974. Purchases of $23,516 million from the United States were 10.4 percent higher than in 1974 and accounted for 67.8 percent of all imports, slightly above the share for 1974. Imports from Japan and Latin America were down 13.7 and 9.5 percent, respectively, while those from the EEC (exclusively of new members) and the United Kingdom were up 9.2 and 8.9 percent, respectively.

Import increases from the United States covered a broad field of items, highlighted by automobiles and parts: new cars, up $496.1 million, and motor vehicle and engine parts, up $475.6 million. Significant increases were also registered for: coal, up $271.4 million; aircraft engines and parts, up $76.6 million; and meat, up $36.9 million. Principal declines in imports from the United States took place in: steel, down $122.3 million; aircraft, $85.8 million; and plastic materials, down $62.8 million.

Canada's global trade deficit in 1975 amounted to $1,913 million, compared to a surplus in 1974 of over $400 million. (On a balance of payments basis, the merchandise trade balance changed from a surplus of $1,520 million in 1974 to a deficit of $795 million in 1975.) In trade with the United States, Canada in 1975 registered a deficit of $2,049 million (unreconciled basis).

A factor which should have an important bearing on Canadian imports in 1976 is the strength in investment. In January the Department of Industry, Trade and Commerce released its October 1975 survey of the capital spending plans of 300 large Canadian companies, which showed an expected 28 percent rise in 1976, half real and half inflation. Although some observers consider these results somewhat optimistic, there are enough projects either in the process of implementation or in the advanced planning stage that, even in the light of known cutbacks and stretch-outs, considerable growth seems realistic. If consumer spending, which represents approximately 60 percent of total expenditures in the economy, holds up, as is expected because of the surge in spending on durable consumables begun in 1975 and continuing in 1976, then the volume of Canadian imports should equal or surpass the 1975 record. Effects of the government's anti-inflation program, in force for only three months, are not yet clear; however, restrictions in the growth of government spending should not affect imports significantly.

A strong housing sector is forecast for

New Marketing Guide

A new report on Marketing in Canada, prepared by Kenneth L. Fernandez of the Bureau of International Commerce, provides information on a wide variety of market-related subjects of interest to U.S. traders and investors. The 40-page publication, issued in Commerce's Overseas Business Reports series, ranges from a discussion of general trade and economic trends to a market analysis for selected commodities and special provisions and requirements that affect foreign business. OBR 76-02 is available for 50¢ from any Department of Commerce District Office or from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

1976. The preliminary total of housing starts for 1975, at the 231,000-unit level, is far higher than was generally expected early in 1975 when it was felt that the high level of mortgage rates and house prices would significantly reduce housing demand. However, heavy stimulus in the housing area by both the federal and provincial governments has set off an upsurge which put the annual rate of starts in December at a record high of 313,000 units. Although this is an unsustainably high figure, the housing sector should continue strong and starts in the 250,000 area seem to be a good possibility. This should translate into a 16 percent gain in real spending on housing, compared with declines of 12 and 3 percent in 1975 and 1974, respectively.

The federal consumer packaging and labeling requirements for bilingual and metric labeling were being implemented, with the full compliance deadline on March 1. While some products imported in small quantities have disappeared from the market, the new requirements are apparently being observed by most suppliers, and the government has been helpful and flexible in interpreting guidelines. Plans for bilingual and metric labeling of wholesale containers have been temporarily shelved by the federal government.

Provincial regulations of the Province of Quebec, to become effective July 1, 1976 for food products and July 1, 1977 for non-food products, are substantially less restrictive than first anticipated and may pose no serious problems for exporters to the Quebec market.

U.S. products in special demand

U.S. sales of household appliances and furniture are likely to rise in step with the anticipated increase in housing completions in 1976. Auto sales are also expected to register a modest increase.

After several bad years, machine toolmakers for the auto industry, particularly in Ontario, are now optimistic. Demand by the Canadian industry for sophisticated, numerically-controlled machine tools, operated by computers or magnetic or paper-punch tapes, is gradually rising. Although these tools carry a large price tag, they offer increased productivity and savings on labor and production costs. Canadian importers of numerically-controlled machine tools also anticipate a good year as a result of demand from makers of electrical equipment, off-road vehicles for the mining industry and valves for the petrochemical industry.

Spiraling labor costs in 1975 had the effect of heightening interest in U.S. sources of supply, and now the recent upward trend in the value of the Canadian dollar helps offer comparative advantages to U.S. exporters in many fields: heat and energy systems; food processing, packaging and bottling machinery; metalworking and electrical machinery; hardware supplies; and yarns, fabrics and clothing. In Quebec more interest in U.S. sources for building equipment, machinery and supplies has also been noted.

On the west coast, the depressed state of British Columbia's two major industries, forestry and mining, is slowing the need for capital equipment temporarily, but with the expected stimulus from the pickup in the economies of the United States and Japan, additional capital equipment will be in demand. Only the purchase of pollution control equipment to meet environmental standard deadlines seems not to have suffered greatly; this will continue to provide an interesting market for U.S. exporters.

With U.S. exports to Canada nearing the $25 billion mark annually, by far greater than to any other country, it is obvious that Canada provides a lucrative market for U.S. products. Canada is seeking to broaden its trade ties with the EEC, Japan and other countries. This policy involves no discrimination against imports from the United States and is not likely to affect trade patterns significantly, but aggressive and modern marketing methods will need to be employed to retain the present U.S. share of the market. The volume of exports from the United States should continue to climb as the two interdependent economies recover from the fading recession.

The eventual successful completion of the current Tokyo Round of multinational trade negotiations in Geneva should see a further decline in tariff and nontariff barriers between the United States and Canada and provide the basis for continued strong growth in trade across the border.

Israel Maintains Interest In High Technology Products

The former rapid growth of Israel's economy has slowed to the point where it is estimated that GNP did not increase at all in 1975. This downturn was caused in part by the depressed world market and also by government policy designed to reduce Israel's huge balance of payments deficit by restraining imports and private consumption. While the government's policy of restraint will continue, higher growth is expected this year. This will present opportunities to expand U.S. sales, particularly in the high priority export and defense sectors, according to James C. Dean, Economic/Commercial Officer at the U.S. Embassy in Tel Aviv.

In 1975, net foreign investment, imports and exports were almost frozen in real terms, while the rate of inflation was reduced to 24 percent. Nonetheless, the balance of current account deficit increased by $200 million to $3.7 billion.

In June the government announced a policy of mini-devaluations of the Israeli pound by a maximum of 2 percent at minimum intervals of 30 days. However, the government indicated that it would undertake larger devaluations whenever necessary, and on Sept. 28 the pound was devalued by 10 percent. The present exchange rate of the pound is IL 7.52 per dollar.

The U.S. share of Israel's import market increased from 18 percent in 1974 to 22 percent in 1975. The value of U.S. exports to Israel rose to about $1.5 billion, compared to $1,205 million in 1974, according to U.S. figures.

In the period ahead, U.S. suppliers will have to participate in an increasingly competitive market, but interest in high quality, high technology American products is as strong as ever. The following areas offer the greatest opportunities:

- **Chemical Processing**—Expansion of Israel's chemical and petrochemical industry is a high priority, with an investment of more than $500 million forecast over the coming four years. Among products that would enjoy maximum acceptance are: instrumentation in general, including monitoring and process control instruments; heat exchangers; valves; pumps; generators; special pipes, especially of aluminum; reactors; ovens; crushers; conveyors; mining and earthmoving equipment.

- **Electronics**—The rapid development of Israel's electronics industry has relied on the United States as its major supplier. Defense requirements play a major part in the development of electronics in Israel. Products that would enjoy maximum acceptance include:

Semiconductor and integrated circuit production equipment, including ion implantation equipment; vacuum pumps; soldering equipment; leak detectors; crystal growing equipment; dicing machines; diamond and laser scribing machines; plotters; and high-vacuum feed-throughs.

Printed circuit production equipment including N/C drilling machines; fusing and leveling machines; cleaning and drying equipment, and silk screen equipment.

Wiring assembly and other interfacing equipment, including automatic welding systems, strippers, and wire wrap systems.

Test equipment for production and in-

spection of electronic products including integrated circuit test equipment; transistor test equipment; resistor test equipment; microwave equipment; signal generators, spectrum analyzers; power meters; network analyzers; automatic test systems; wiring test equipment; printed circuit board testers; digital systems analyzers; wire bond testers; chip evaluation equipment; diode test classifier equipment, and oscilloscopes.

• **Computer and Peripheral Equipment**—About 80 percent of the country's needs in this area are met by imports, the major part being supplied by the United States. Minicomputers will have the largest share of the market in Israel over the next few years. In addition, small and medium digital computer systems, data communications remote terminal systems, including high-speed printers; teletypewriter and teleprinter terminals; paper-tape terminals; data collection terminals; multiplexers; modems and data sets all have high sales potential.

• **Process Control Instrumentation**—With the large anticipated expansion of the chemical and food and other industries, it is expected that PCI needs will expand proportionately. To maintain its competitive advantage, the United States must induce new companies to enter this rapidly growing market, appoint aggressive agents with servicing facilities, and, where feasible, enter into licensing agreements. Among products that have high sales potential are: sensors; transducers; flowmeters; diaphragms; gas chromatographs; transmitters; controllers; measuring and control systems.

• **Avionics and Aviation Support Equipment**—The Ministry of Transport is planning to spend approximately $25 million for two international airports, at Beer Sheva and Eilat. Moreover, ground instrumentation sales should increase because of the proposed expansion of Israel's airport network. The main end-users of avionics and support equipment are: El Al, Israel's National Airline; Israel Aircraft Industries and related companies; Civil Aviation Administration; Ben Gurion International Airport; Israel Defense Forces; Chimavir Ltd. (agricultural crop dusting main line); and Arkia, Israel's internal airline.

• **Pollution Control Instrumentation and Equipment** — Controlling air and water pollution is one of the priorities of the Israeli Government. Plans are under way for setting up an air monitoring system throughout Israel. With its installation, sales of air pollution equipment should reach over $50 million by 1978. Equipment which has good sales possibilities are catalytic equipment; filters; gas absorption; scrubbers and washers; aerators; electrostatic precipitators; centrifuges; demineralization and ion exchange equipment; floculating and flow measurement analyzers.

• **Health Care Industries Equipment and Instrumentation**—The Ministry of Health and public health organizations have extensive planning for future construction. Products that would enjoy sales include computer systems for EKG record-keeping; respiratory equipment; pediatric equipment; dialysis apparatus; cryosurgical and laser surgical instruments; central station patient monitoring systems; portable resuscitators; blood gas analyzers; oscilloscopes; centrifuges and spectometers.

• **Power Generating Equipment**—The Israel Electric Corp. (IEC) Ltd. supplies almost all electricity in Israel by means of oil-fired power stations. Israel has decided to try to diversify its energy sources; coal may be used to generate electricity at a dual-purpose oil and coal power station to be constructed at Hadera. This plant will eventually consist of four generating units, the first to be ready by 1978. This new project will lead to the purchase of new equipment, and IEC is interested in buying from the United States.

The government has decided in principle that from 1980 all new electric power plants will be nuclear. The contracts for Israel's first 600-megawatt nuclear power plant are expected to be awarded sometime this year. Since Israeli-made components are to be subcontracted to the extent possible, Israeli firms are currently examining supply sources of some components. Koor Industries is already seeking licensing arrangements, joint ventures or some other forms of cooperation with U.S. firms to manufacture nuclear power components in Israel.

• **Metalworking and Finishing Equipment**—Aircraft manufacture, both for the military and civilian sectors, is an important target area. Rocketry and shipbuilding (speedboats) are also high priorities. All of these need sophisticated equipment in which the United States can compete. Products which would be most required include high accuracy machine tools; tools; parts; accessories and auxiliary equipment; measuring, testing and inspection equipment; bending and forming machines; punching and shearing machines; and N/C machine tools.

• **Business Equipment and Systems**—The market for business equipment in Israel is good and is expected to reach about $142 million by 1979. The United States has a strong foothold in the market for nearly all large business machines, including microfilm, electronic accounting and calculating machines. Equipment which would enjoy maximum acceptance if promoted includes electronic accounting machines; electronic calculating machines; copying/duplicating machines; microfilm equipment; typewriters; electronic banking machines; coin and currency handling machines.

Ivory Coast Is Enlarging Trade Base, To Advantage Of U.S. Manufacturers

The Ivory Coast is making a determined effort to broaden its sources of supply for the capital equipment and consumer goods needed to fuel an economy of growing size and sophistication, much to the advantage of U.S. manufacturers, according to John Crawford, Economic/Commercial Counselor at the U.S. Embassy in Abidjan.

Recently arrived American business representatives have expressed satisfaction with the interest shown in a wide variety of U.S. products, including business equipment, textile machinery, industrial refrigeration equipment and processed foods. American figures show that U.S. exports to Ivory Coast in 1975 totaled $78 million, compared with $49 million during 1974. In the past U.S. exports were linked to a few major projects; now they cover a broad range of product types. This broadening of the trade base bodes well for the future.

Industrial machinery will be needed for the planned expansion of the textile industry (already Ivory Coast's second largest non-energy manufacturing industry), and in food processing and fisheries. Five textile plants are now in operation, and four more spinning and weaving plants are scheduled to begin operation by 1980. As Ivory Coast seeks to make itself more nearly self-sufficient in food production, including seafood, refrigeration and packaging facilities will be required.

In the forestry sector Ivorian tax law encourages companies now exporting logs to set up partial processing and finishing operations as soon as possible. The Ivorian Government hopes that 15 percent of its timber exports will consist of finished or partially finished timber products by 1980. This will involve further investment in the forestry sector as existing plants modernize facilities and new plants are installed. The government believes most new investment in this sector will focus on the southwest region, where the largest stands of exploitable forest remain. If the long anticipated paper-pulp processing plant is finally realized this, too, will require major expenditures for capital equip-

ment and heavy investment in plant and infrastructure.

The key to selling in Ivory Coast is an appreciation of the distinct character of the people and the market. Sales presentations must be in French, and the U.S. supplier must be prepared to exert a sustained effort to locate, train and support a local agent. The quality of after-sales service is important. Most importers of machinery and capital goods are large, European-owned multinationals with considerable market savvy, financial strength and technical competence. U.S. manufacturers can contribute state-of-the-art technology to make a winning combination.

Last July Ivory Coast abolished "reverse preferences" for imports from the Common Market, thus equalizing the duties applied to imports from the United States and making American products more price competitive.

U.S. business persons will want to take note of several major projects planned or under way in Ivory Coast that offer opportunities for participation. Port expansion projects at Abidjan and San Pedro will require major imports of machinery and equipment. For the Abidjan port, equipment for loading and transporting containers and bulk cargo (including logs, grain, edible oils and fish) is scheduled for procurement. San Pedro anticipates not only the building of port facilities for timber, cement and fish, but the creation of an entire new industrial zone, international airport, highways and rail facilities.

Louis Berger, Inc. has recently completed a study for a 300 km-railway to link San Pedro and Man in the northwest. Pickands Mather, Inc. heads an international consortium charged with exploiting the Mt. Klahoyo iron deposit and constructing an iron ore pelletizing plant to be served by the railway. Kaiser Engineers is engaged in supervision of construction of the Taabo Dam. Other dams are planned for Buyo and Soubre on the Sassandra River.

U.S. firms interested in bidding on infrastructure projects should note that the Ivorian Government normally prefers turnkey proposals with fixed prices. Although reasonable escalator clauses have been accepted, "cost-plus" contracts are not considered.

First National City Bank opened a new office in Abidjan in October to provide full-service corporate banking. Other U.S. banks with major interests in Ivory Coast include Bank of America, Bankers Trust Co., Chase Manhattan and Morgan Guaranty. Some of these, as well as other U.S. banks, are contemplating the opening of branches or representative offices in the near future. The U.S. accounting firms of Arthur Andersen and Price Waterhouse have opened regional offices in Abidjan. Opportunities in financing trade and long-term credits will grow as new infrastructure development projects come into existence. Formalities for setting up a representative office in Ivory Coast are minimal and taxes are nominal at present. This, in addition to the ambiance of Abidjan itself, make it a logical regional center for U.S. firms seeking to establish themselves in Africa. Communications with the exterior are adequate and are being improved as Ivory Coast, with World Bank assistance, modernizes its telex, telegraph and microwave services. Already a satellite relay station at Bingerville (15 kilometers from Abidjan) allows excellent telephone communication with Europe and the United States.

UNLOADING IN IVORY COAST—*Oil of palm fruit is shown being transferred from a truck into processing facilities at Toumangie, Ivory Coast (World Bank photo).*

Public investment emphasis

Expansion of the agricultural sector will require major land clearing and preparation. While the forestry industry has suffered from the worldwide slump in homebuilding, it has begun once again to purchase heavy equipment in anticipation of a turnaround. Other agricultural projects in coffee, cocoa, palm oil, rubber, sugar, rice, corn, soybean, sorghum, cotton and tropical produce have met with considerable success. About 70 percent of total public investment is devoted to the agricultural sector, including agribusiness projects and irrigation works.

Industrial investment is largely in the form of government participation in the capital of new or existing enterprises as part of a policy of "Ivorianization". The remainder of public investment is devoted to the search for and exploitation of minerals, to energy production, to transport and communications, and to public housing. For companies interested in investment, opportunities abound in agribusiness, timber, food processing and textiles. The Ivorian private investment code is one of the most favorable in Africa. Repatriation of capital and after-tax profit is virtually unrestricted. Priority status, guaranteeing duty-free imports and tax-free status for 12 years, is obtainable.

A branch of the Ministry of Plan, the *Bureau de Developpement Industrial (BDI)*, in operation for several years, is prepared to assist prospective investors with applications for priority status, and potential local-cost financing, as well as to indicate the most appropriate type of investment in the context of both the firm's desires and the government's development goals. While the government is most interested in investments that make use of local primary commodities such as coffee, cocoa and wood through further processing which yields higher value exports, they also welcome other investment proposals.

Industrial zones are to be established at Bouaké Agboville, Ferkessedougou and Banco (near Abidjan) as well as San Pedro. Several road projects are under way, and the Abidjan-Niger railway is slated for modernization and expansion of capacity. Invitations for bids have been issued for the first phase of a World Bank-financed $35 million telecommunications modernization and expansion project.

View From Burma: Economic Reforms Remain Necessary

Burma's economy recorded moderate growth in 1974-75 as domestic petroleum resources and a low level of participation in international commerce provided a cushion against higher world oil prices and a general downturn in global economic activity. However, real GDP growth was very small in absolute terms and in percentage terms was only slightly higher than population expansion. The all-important agricultural sector expanded at a slower rate than the overall economy, but due to excellent growing conditions prospects for the present crop year are very good; the expected increase in agricultural output should lead to another year of modest GDP growth and assure ample food stocks, perhaps at lower prices, for Burma's consumers. The U.S. Embassy in Rangoon adds a cautionary note: given the fragile state of Burma's economy, this situation could easily reverse itself, and much will depend on such exogenous factors as the weather and international rice market.

For the longer term, Burma is well-endowed with natural resources such as forests, agricultural potential and minerals, and the country boasts a well-educated population. These excellent resources could remain untapped unless the government institutes a wide range of reforms beginning with a more pragmatic approach to all economic problems and focusing on price, wage and investment policies.

Mainly as the result of pressure from international financial institutions, the government implemented a number of reforms within the past year. Others, such as a more decentralized banking system, new revenue measures, less central control of government enterprises and greater investment in agriculture, are to be introduced in the coming year. It will take more than this merely to raise some sectors of the economy up to the stagnation level, but these reforms represent a small step in the right direction. They also indicate that the Burmese Government will respond at least to a degree to recommendations for reforms from multilateral financial organizations.

Restrictive import policies helped narrow Burma's unfavorable trade balance last year, and preliminary figures for the first half of the present fiscal year indicate an upturn in foreign trade with exports exceeding imports. Inflows of foreign loans and grants provided a small surplus in the overall balance of payments, but Burma's total foreign debt has doubled in the past decade and the foreign debt service ratio is alarmingly high. Inflation, due mainly to an increase in money supply to finance chronic budget deficits, has become Burma's most pressing economic problem. Most commercial activity is centered in Burma's thriving black market, causing an erosion of the tax base. Economic reforms remain necessary if Burma is to take advantage of its resources.

U.S. business presence in Burma is mainly confined to two firms engaged in offshore petroleum exploration under participation agreements with the Burmese Government and to related support activities. The government continues to prohibit all other forms of private foreign investment. There seems little likelihood that this policy will change within the current year, despite the country's dire need for investment and capital inflow.

The total value of U.S. sales to Burma may have fallen marginally in 1974-75 from that recorded in the last fiscal year period, but due to a further drop in Burma's estimated total imports, the U.S. share of the market remained virtually unchanged at 8 percent. U.S. firms are beginning to pay more attention to the Burmese market, as evidenced by a net gain of 16 (76 to 92) in 1975 in the number of U.S. companies that have signed agency agreements with the Myanma Export Import Corporation (MEIC), the state-controlled foreign trade monopoly which acts as sole legal sales agency for all foreign firms in Burma. Also, the number of U.S. firms employing technical representatives (local non-sales personnel who can be hired on a salaried basis only after a firm has concluded an agency agreement with MEIC) rose from 32 to 51.

Most of Burma's foreign purchases are made through international competitive tender, and this has caused some problems for U.S. firms. High shipping costs from the United States have often placed U.S. firms at a price disadvantage.

A major portion of Burma's purchases from abroad will continue to be financed by loans from the World Bank or Asian Development Bank. Recently the World Bank granted an IDA loan of $7.5 million for livestock development, which will include construction of a milk processing plant. The Asian Development Bank recently approved a $25.3 million loan for construction of a jute mill. U.S. suppliers should be in good competitive position to obtain contracts arising from these loans.

Earlier loans from these institutions for which tenders are still being issued include projects in fisheries, flood control and irrigation, power transmission, communications and rice processing industries. About 35 percent of the value of orders resulting from World Bank loans have gone to U.S. suppliers, and this could rise in 1976 as most tenders under present loans will be for goods and services in which U.S. suppliers are most competitive.

The most promising categories for direct sales to Burma this year include trucks and transport equipment, capital machinery, materials handling equipment, road construction and earthmoving machinery, communications equipment and systems, oil drilling rigs, forest extraction equipment, livestock, chemicals, pharmaceuticals and spare parts. There may also be opportunities for consultant services in connection with World Bank or Asian Development Bank projects.

Brazil Suspends Certain Imports

Brazil has suspended the importation of some 300 product categories through June 30. Most of the products affected are non-essential, but included in the prohibited list are the following items of noteworthy interest: household refrigerators, electric water heaters, automobiles, calculators, household electromechanic apparatus, telephones, microphones and loudspeakers, TV sets and radios, pocket and wrist watches, phonographs and sound recorders, paper and cardboard, cosmetics, soaps, washing and drying machines, textile apparel, pens and pencils, lighters, and some glass articles.

The full list of items affected, in Portuguese, may be obtained from the Brazil-River Plate Group, Office of International Marketing, Room 4039, U.S. Department of Commerce, Washington, D.C. 20230.

Germans Salute U.S.

Germany's historic port cities of Bremen and Bremerhaven will underscore their traditional ties with the U.S. as they join in the celebration of the American Bicentennial this spring. Visits to Washington, Houston and New Orleans by the cities' civic, port and business leaders will culminate in a reception at the World Trade Center in New York on May 20.

A Bremen exhibit at the Center reception will dramatize the long ties between the Free Hanseatic State of Bremen and the U.S. The State of Bremen was among the first European political entities to recognize the newly-independent United States. Bremen also served as a main port of exit for thousands of immigrants in the 19th century. The red and white striped Bremen flag, some believe, may have helped inspire the design of the U.S. flag. Mayors of several towns in the U.S. named Bremen will be guests of the German port cities this summer.

International Business Reports

Doing Business Abroad: Joyner's Guide to Official Washington, 1976. By Nelson T. Joyner, Jr. 300 pp. $144.

Designed for the executive who wants to pinpoint official Washington contacts and save time in getting access to services in the field of international business, this loose-leaf guide lists, by subject of expertise, the names and telephone numbers of more than 2,000 government specialists in some 40 agencies. In addition, a 96-page "road map to Washington resources" identifies and describes by subject 800 government services. Fifteen U.S. government services, budgeted at over $20 million, are described in another section, followed by a checklist which identifies more than 500 U.S. Government publications, periodicals and foreign market research reports.

Write: Rockville Consulting Group, Inc., P.O. Box 1364, 414 Hungerford Dr., Suite 444, Rockville, Md. 20850.

Higher Oil Prices: Worldwide Financial Implications. Published by the British-North American Committee. 64pp. $3.

Comprises two elements: a policy statement on this subject adopted by the Committee during a regular semi-annual meeting in the summer of 1975, and a research report prepared by Sperry Lea, the Committee's North American Research Director. The British-North American Committee is composed of about 100 leaders of business, labor, agriculture and the professions in the United States, in Great Britain and in Canada.

Write: National Planning Association, 1606 New Hampshire Ave., NW., Washington, D.C. 20009.

Financial Post Survey of Markets 1975/76. 348pp. $15.

Offers a wide range of information on Canada's hundreds of consumer market areas. Included is information for 1975 and projections for 1977 and 1980 on population, number of households, personal disposable income and retail sales for Canada and its provinces and metropolitan areas; profiles of each major market area and municipality; and an assessment of developments and trends in the Canadian economy.

Write: The Financial Post, 481 University Ave., Toronto, M5W 1A7.

Industrial Incentive Policies and Programs in the Canadian-American Context. By John Volpe. Sponsored by the Canadian-American Committee. 57pp. $2.50.

This study deals with one area of concern in U.S.-Canadian relations: "the incentive policies and programs that have been adopted by both countries to assist domestic industry and that are perceived to have spillover effects on the economy of the other. Its purpose is to review certain industrial incentives that are actual or potential irritants in Canadian-American relations, to assess their balance of payments impact, and to review briefly their other economic consequences for both countries."

Write: National Planning Assn., 1606 New Hampshire Ave., NW., Washington, D.C. 20009.

A Business Guide to the European Common Market. By J. Robert Wilson, Bureau of International Commerce. 10pp. 50¢.

This publication supplements Commerce's individual Overseas Business Reports on marketing in each of the countries that are members of the Common Market. Existence of the customs union and common policies and regulations affect the conduct of business in Europe. In some respects they may constitute a barrier or impediment, in others an opportunity. On the other hand, in many fields national policies and regulations still remain of primary importance and are only marginally influenced by Community decisions. This report is designed to help familiarize American foreign traders and investors with those aspects of the Community that bear on U.S. business operations.

One in a series of Overseas Business Reports; subscription to the entire series is $36.50 a year ($9.15 additional for foreign mailing).

Write: Any Commerce District Office or Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Testing and Certification for Export Products in Industrializing Countries. Published by Commerce's National Bureau of Standards. 1976. 168pp. $2.40 (add 60¢ for foreign mailing).

This report includes papers presented and ensuing discussions at a regional seminar sponsored by the Singapore Institute of Standards and Industrial Research, the National Bureau of Standards and the Agency for International Development, in Singapore in May 1975. Participants represented most countries in South Asia concerned with increasing exports, and concentrated on various problems connected with the testing and certification of such exports. Most of the prepared papers reviewed the practice and future plans of these countries. During the discussion a number of specific problems and issues were raised, with much attention focused on the extent to which the standards and certification of goods can be recognized by the importer.

Write: Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (order by SD Catalog No. C13.10:438).

Canadian Marketing Directory. Published by National Business Lists, Inc. Free.

The publishers say this directory encompasses more than 400,000 businesses, institutions and professional firms and "was designed to help marketers plan their objectives, measure their marketing universe and select precisely targeted segments of the Canadian marketplace."

Write: National Business Lists, Inc., Department Y, 162 North Franklin St., Chicago, Ill. 60606.

Calendar For World Traders

April 2—Harriman, N.Y.—Columbia/Harvard Univ. conference on U.S.-USSR trade. Arthur T. Downey, Deputy Asst. Secretary of Commerce for East-West Trade, will speak.

April 7—New York—Export Finance and Insurance seminar, Essex House. Sponsors: New York Chamber of Commerce and Industry, Chamber of Commerce of the United States.

April 8—New York—Overseas Automotive Club meeting, Summit Hotel. Speaker: Richard F. McGill, Director of Marketing, General Motors Overseas Operations Div.

April 13—New York—International Executives Assn. conference, Waldorf-Astoria. Theme: International Trade Realities—Today and Tomorrow. Co-sponsored by New York Commerce District Office. Commerce's Arthur T. Downey will speak.

April 13—Clayton, Mo. — Export Documentation Workshop. Sponsored by St. Louis District Office, 314-425-3304.

April 20—New York—FCIB Hardware–Automotive & Allied Trades Group luncheon meeting, Summit Hotel.

April 21—Greenville, S.C.—Meeting of the Greenville-Spartanburg International Trade Club.

April 21-22—Chicago — 39th Chicago World Trade Conference, Hyatt Regency. Theme: The Transnational Company and Economic Interdependence. Sponsors: Chicago Assn. of Commerce and Industry and International Trade Club of Chicago.

Worldwide Business Opportunities

International trade specialists in the Department of Commerce and Foreign Service Officers in the U.S. Embassies and Consulates around the world are continually developing specific commercial opportunities through which American companies can find buyers, agents, partners or investors abroad. One of the major means for communicating these opportunities promptly and accurately to the U.S. business community is through the columns of this magazine.

The section that follows presents details about licensing and joint venture proposals, opportunities to sell to foreign enterprises and appoint agents, and details on major construction and expansion projects.

Licensing, Investment Abroad

2065, 5411—HONDURAS—Joint venture arrangement is sought with U.S. supermarket chain for establishment of **candy factory** to supply local market and other Central American countries. Firm presently operates two supermarkets in San Pedro Sula and owns several other businesses; is well regarded in local banking and commercial circles and enjoys good reputation. For candy projects, U.S. firms are invited to submit brochures, quotations, proposals. For name and address of person to contact for additional information write: Overseas Products & Investment Opportunities Staff, Room 4021, U.S. Department of Commerce, Washington, D.C. 20230. P-76188. OPIC.

2621—FRANCE—Seeks licenses to manufacture and market in France and eventually Europe **novel copying and offset printing papers.** Also interested in producing **original office paper items.** Initially, firm would import and distribute these papers for American licensor. French concern is important paper mill in eastern France: has extensive, modern production facilities and sales force which includes 40 agents. Substantial part of production is exported to other European countries. Reports annual sales of $45 million, excellent credit rating. Papeteries de Clairefontaine, 88480 Etival-Clairefontaine. P-76181.

2700 — UNITED KINGDOM — Licensing arrangements sought by manufacturers and printers of high quality **wine and spirit labels by gravure and lithographic processes, multi-colored self-adhesive labels and flexible foil packaging.** Company employs 350. Products or processes similar or allied to firm's present activities are of interest. R. A. Ripley, Ripley & Co., Ltd., 6 Westminster Bank Chambers London Bridge, London SE 1, England. P-76175.

3433, 3585—NETHERLANDS—Manufacturer of **gas heating appliances** and **stainless steel milk coolers** seeks licensing arrangement for manufacture of compatible lines. Company is also subcontractor for sheet steel and stainless steel products. Firm has presses of up to 630 tons, table dimensions 2,000 x 2,500 mm., welding machines, assembly lines for sheet steel and stainless steel equipment. Has an enamel and lacquer department. Enterprise is wholly owned subsidiary of large international trading, production and transportation group: International Muller, Rotterdam. J. Ten Have, Diepenbrock & Reigers (DRU) BV, 24 Hutteweg, Ulft, Gelderland. P-76179.

3494—FRANCE—Large firm is interested in manufacturing under license peripheral equipment such as **fluid cooler devices or related equipment.** Company would also buy these materials for its own use. Firm presently manufactures engine radiators, industrial water and oil coolers, car bodies and sells throughout Europe and America. Employs 18,000. Mr. Rochoux, Manager, Int'l Dept., S.A. des Usines Chausson, Division Thermique, 35 rue Malakoff, 92601 Asnieres. Telex, 620337; phone, 733-9000. P-76176.

3523—UNITED KINGDOM—Licenses to produce **wide range of agricultural machinery and accessories** with exception of tractors are sought by producer and major distributor of farm equipment and structures. Firm is also interested in making **livestock equipment** except for poultry and particularly seeks innovative products. British concern's product line includes grain drying and storage equipment, elevators and conveyors, grain silos, dairy equipment, farm buildings, slurry storage tanks and horticultural equipment. It exports worldwide except for Central and South America. Concern employs 350 with 32 salesmen. A. Perrott, Director, Simplex of Cambridge, Ltd., Sawston, Cambridge, CB2 4LJ, England. P-76187.

3530—AUSTRIA—Large manufacturer of proportioning machines, feeders and dumpers seeks licensing agreements. Interested in production of **conveyor systems, screening machinery, separators, proportioning equipment, recycling systems and machinery and systems for waste removal and disposal.** Company has subsidiaries in West Germany, Switzerland and Sweden. Maintains agents or licensees in all Western European countries except Portugal and Denmark. Also has special export division for Eastern Europe. Is interested in marketing throughout Europe. Helmuth Leihs, IFE GmbH, Patertal 20, A-3340 Waidhofen/Ybbs, or Austrian firm's U.S. office: IFE Systems, Inc., 37 Midland Ave., Elmwood Park, N.J. 07407. U.S. companies responding to this opportunity are requested to send copy to American Embassy, IX Boltzmanngasse 16, A-1091, Vienna. P-76190.

3531 — AUSTRALIA — Seeks license to manufacture **replacement wear parts for large earthmoving draglines and other earthmoving equipment.** Examples of such equipment would be dragline teeth, bucket drag chains, hoist chains and ripper teeth. Replacement parts for crushers would be of interest. Firm is also interested in manufacture under license of **mining production equipment, including underground haulage cars and cranes and other hydraulically-operated mining equipment.** Presently, concern makes truck-mounted hydraulic cranes for use in building industry and drilling rigs for minerals exploration. Employs 25, annual sales of over $1 million. Jarco Industries Pty. Ltd., Strathpine, Queensland. Copies of firm's product brochures available from Overseas Products & Investment Opportunities Staff, Room 4021, U.S. Department of Commerce, Washington, D.C. 20230. P-76185.

3533 — UNITED KINGDOM — Seeks license to manufacture **heavy mechanized equipment for oil industry.** Scottish firm produces paper, board and transparent film; ferrous and non-ferrous castings; and offshore oil engineering equipment. Employs 300. A. C. McLaren, Bertrams Ltd., P.O. Box 301, Sciennes, Edinburgh, EH9 1PF, Scotland. P-76170.

3552—GERMANY—Manufacturer and distributor of textile dyeing and finishing machinery plans to expand its production program. Seeks licenses to produce **newly developed textile dyeing and finishing machinery and equipment.** Firm employs 170, markets throughout Germany. Breco-Textilveredelung GmbH, Meckelstrasse 88, 5600 Wuppertal-Barmen. P-76186.

3559 — UNITED KINGDOM — Seeks to manufacture **effluent treatment equipment.** Firm fabricates steel, produces piling and effluent treatment equipment. Operates engineering subsidiary; employs 90, including 4 salesmen. Annual sales, about $2 million. W. W. Laird, C.Eng., M. I. Mech.E., Managing Director, Redhurst Engineering Co., Ltd., Law Place, Nersto Mains, East Kilbride, Glasgow, G74 4PJ, Scotland. WTDR. P-76171.

Licensing and investment proposals from foreign firms are listed in these columns. Specific product interests in each proposal are highlighted in bold type to facilitate identification and each proposal is preceded by the appropriate four-digit product number taken from the Standard Industrial Classification (SIC) Manual.

Background information on opportunities abroad and assistance on overseas investments are available from the Overseas Products and Investment Opportunities Staff, Room 4021, U.S. Department of Commerce, Washington, D.C. 20230. "P" numbers should be used when responding to any of the specific proposals listed.

WTDR indicates that a World Traders Data Report containing financial and background information on the foreign firm is available for $15 from the Export Information Division, Room 1313, U.S. Department of Commerce, Washington, D.C. 20230, or from any Commerce District Office.

OPIC indicates that the country involved is eligible for investment insurance coverage and financing from the Overseas Private Investment Corporation. Information regarding applicable coverage may be obtained from OPIC, Washington, D.C. 20527.

3630 — GERMANY — Seeks licenses for variety of **electrical household appliances** including laundry machines, dishwashers and small electrical items. Firm is presently engaged in the engineering, distribution and service of household appliances. It has no manufacturing facilities of its own, but would utilize its relations with European manufacturers already making German concern's patented washer/dryer combination. Company employs 30, enjoys good commercial reputation. Herrn K. Duschner, PTM Pantromat GmbH, Postfach 1260, D-6090 Ruesselsheim/Main. WTDR. P-76180.

3631—HONDURAS—Interested in manufacturing **gas ranges** under license. New venture would cover Central American market. Firm was established in 1961 to produce aluminum kitchen ware. Presently, company produces flourescent lighting fixtures, assembles gas ranges and aluminum housewares. Markets throughout Honduras, exports to Guatemala and Nicaragua. Has good business reputation. Fernando Naranjo, Manager, Aptdo. Postal 188, Carretera a Puerto Cortes No. 165, San Pedro Sula. P-76173. OPIC.

3677—MEXICO—Manufacturer of **transformers** for radios, television receiving sets, calculators and similar equipment seeks joint venture. Wants to expand, improve quality control; seeks financing, technical know-how. Offers U.S. participant 49 percent equity. Mexican firm supplies major domestic electronics manufacturers: market demand currently exceeds transformer supply. Company projects 1976 sales at $1.5 million. Circuitos Magneticos, S.A., Avenida de Las Torres, No. 458 Mexico 14, D.F., WTDR. P-76172.

3714—GERMANY—Company, specializing in production and development of disks and other parts for automobile and machine clutches and brakes, seeks licensing arrangement for production of patented components of **clutches and brakes,** such as plate springs, disks for clutches, brake disks and stamped metal parts for use in automobiles and machines. Company employs 130 and reports annual sales of approximately $4 million. Dr. Ing. Kurt Haeussermann, Haeussermann Lamellan, Obertuerkheimer Strasse 61-71, D-7300 Esslingen. Phone, 0711-321 041; telex, 07253 435; cable LAMELLE. WTDR. P-76174.

3715, 3531, 3632—ECUADOR—Experienced assembler of motor vehicles seeks American investor interested in joint venture for local manufacture or assembly of **commercial-type vehicles** such as delivery vans, dump truck bodies, truck trailers; **construction equipment** such as concrete mixers, scaffolds; and **household appliances** such as refrigerators, ranges. Existing plant occupies 4.7 acres, is equipped to cut, weld, and form sheet metal (aluminum or steel). Industria Ecuatoriana de Montaje S.A., P.O. Box 4612, Guayaquil 4612. P-76178.

3811 — FRANCE — Producer of **sonars, auto-pilots, electric compasses, flowmeters and other navigational aids and process controls seeks licenses.** Is interested in the manufacture of any products complementary to present line. Also wants to license its technology in electromagnetic meters to American concern. French company employs 80, operates well equipped plant. Owner is engineer and naval architect. Jacques Nosley, President, Directeur General, BEN, 5 Bld Moulin Guieu, 13013, Marseille. WTDR. P-76182.

3811, 3679—UNITED KINGDOM—Seeks license or joint venture agreement to manufacture advanced technology equipment within following categories: **airborne radiation warning monitors and indicators, cine recording cameras, cockpit voice recorders, de-ice timers, engine start timers, fault annunciators, fuel timers, gunsight cameras, head-up display cameras and quick access recorders.** Established in 1938, firm has annual sales of $9.4 million, and includes major world airlines among its customers. M. B. Prudence, General Manager, Camera Division, S. Davall & Sons, Ltd., Wadsworth Road, Perivale, Greenford, Middlesex UB6 7JE. P-76184.

3942, 3944—SYRIA—Seeks joint venture for establishment of **toy factory.** Also seeks licensing arrangement and technical assistance for manufacture of plastic molds, etc. Toys are to be of educational nature, 75 percent plastic and remaining of metal, cloth and reinforced cardboard. Union of Chemical & Engineering Industries (UNICHEM), Baramkeh Sq., P.O. Box 3120, Damascus. P-76155.

4213—AFGHANISTAN—Government of Afghanistan, with assistance from UN advisors, has developed guidelines and draft charter for a proposed Afghan international **transportation company.** Proposed company will be expected to provide pick-up and delivery of cargo, customs, forwarding, and container services. Objective will be to improve transportation to and from Afghanistan, initially with European route, minimize exchange costs of import and export transactions, and train Afghans in management of transport services. Company will compete with existing international trucking and forwarding operations.

Afghan International Transportation Company will be 51 percent government owned. Government is prepared to invest $1.1 million in first year and additional $7 million in second through fourth year of operation; 49 percent ownership will be open for purchase by foreign or domestic investors. Government wishes to see foreign firm invest in proposed company and provide, in addition to equity financing, a management team to assist Afghans in running company. Team would consist of minimum of 3 persons, one functioning as chief executive, the other two heading maintenance and operations. For more information, write: Mohammed Essa Seyami, President, International Transit and Transport, Ministry of Commerce, Kabul. Interested firms may also wish to correspond informally with J. S. Gallagher, Transport Advisor, United Nations, Kabul. P-76189. OPIC.

4924—AUSTRALIA—Large manufacturer of electrical and electronic products seeks joint venture with American firm experienced in **both domestic and industrial natural gas distribution.** Also interested in licenses or similar agreements to make equipment used in natural gas transmission. It is anticipated that natural gas will be introduced on Australia's east coast within six months, creating large new market. W. S. Littlejohn, National Sales Manager, Email Ltd., P.O. Box 37, St. Peters, N.S.W. 2044. P-76177.

7999—KUWAIT—Seeks to build an **ice-skating rink.** Firm desires to communicate with U.S. firms which can supply information on design, equipment and operation of this type of project. For additional details write directly to Abdulla Al-Roumi, general manager, Al-Roumi Co., P.O. Box 38001. P-76146.

Important Notice

Most member countries of the League of Arab States employ a secondary boycott against foreign firms which undertake certain specific types of business relationships with the State of Israel. The Commerce Department will not disseminate or make available for inspection any tenders or trade opportunity documents which contain conditions intended to support such boycotts, or which are based on documents known to contain such provisions. Trade or investment opportunities published herein are not presently known to be subject to such conditions. However, it is possible that U.S. firms responding to opportunities from Arab countries may be asked at some stage of a transaction to participate in an Arab boycott-related restrictive trade practice as defined in the Department's Export Administration Regulations (15 CFR, Part 369 et. seq.).

Firms are reminded that pursuant to Section 3(5) of the Export Administration Act of 1969, as amended, it is the policy of the United States (a) to oppose restrictive trade practices or boycotts fostered or imposed by foreign countries against other countries friendly to the United States, and (b) to encourage and request U.S. concerns engaged in the export of articles, materials, supplies, or information to refuse to take any action, including the furnishing of information or the signing of agreements, which has the effect of furthering or supporting such restrictive trade practices or boycotts. Accordingly, U.S. concerns receiving such requests to participate in a restrictive trade practice or boycott are encouraged and requested to refuse to comply with them.

Firms are further reminded that U.S. concerns receiving requests to participate in a restrictive trade practice or boycott must report such request to the Department of Commerce in accordance with Section 369.4 of the above-cited regulations.

Licensing In U.S.

BAHAMAS—Local engineer has invented both a **traffic signal emergency flashing generator** and a **burgler alarm padlock.** Is seeking U.S. manufacturer for both items. File 2948

BELGIUM—Building contractor seeks U.S. licensee for his **"transfer" blocks multidirectional concrete.** The "transfer" blocks are reinforced concrete prefabricated components fitted on one side with locking sheathings in fresh concrete casting of flagstones and on other side with paint work, preventing this same fresh concrete from adhering to block. File 2949

FRANCE—Manufacturer of papermaking machinery seeks licensing arrangement with U.S. firm for manufacture and sale of their **spreading and crease removing rolls** used by paper industry. File 2950

FRANCE—French manufacturer of electromagnetic XY current meters seeks U.S. licensee for their product lines which includes: sonars, auto-pilots, electronic compasses and other **navigational aids and process controls.** File 2951

GERMANY—A leading established Ger-

man manufacturer of building materials offers U.S. license for manufacture of their **cellular concrete building materials.** File 2952

GERMANY—A leading European manufacturer of rollers for wall paper printing seeks U.S. licensee for its **electronic engraving process for printing rollers.** Outstanding feature is that it does away with hand cutting, etching of zinc plates, intermediate die work and rubber stereos. File 2953

GERMANY—Firm manufacturing textile bleaching and dyeing machinery seeks U.S. licensee for its high pressure **vacuum dyeing systems.** File 2954

GERMANY—Leading manufacturer of high-quality **window curtains and drapes** is seeking cooperation agreement with large U.S. firm engaged in same operation. File 2955

GERMANY—Manufacturer of road guiding equipment with plastic reflectors seeks U.S. licensee to utilize their patented molds and machinery for production of such equipment. File 2956

GERMANY — Metalworking machinery manufacturer seeks U.S. licensee for its **hydraulic welding edge shears.** Outstanding feature is that it cuts plates and prepares welding edges in one process. File 2957

GERMANY — American machine tool manufacturer capable of making **high-precision machines** of up to 10 tons is sought by German manufacturer of gear-hobbing machines. Cooperation sought is for U.S. firm to supply electric and hydraulic components to gear-hobbing machines supplied by German firm and to market complete machines in U.S. File 2958

SWEDEN—Swedish manfacturer of a broad range of **winches** seeks U.S. licensee. Currently enjoys a substantial export busines in his product line. File 2959

SWITZERLAND—Well established firm offers for licensing in U.S. its line of semi- and fully-automatic **precision forging machines** for round section work pieces. Machines are already being sold successfully to metalworking plants in most industrialized countries. File 2960

SWITZERLAND—A leading **suspended-ceilings** firm seeks U.S. licensee or joint-venture partner to manufacture its products. Typical of products would be large surface ceilings of almost any shape and color for bars, restaurants, conference rooms, large auditoriums, schools. File 2961

Foreign Trade Inquiries

These trade opportunities are based on reports received from the U.S. Foreign Service—Department of State by the Trade Opportunities Division, Room 2323, U.S. Department of Commerce, Washington, D.C. 20230. The commodities in which foreign firms have interest are indicated by the five-digit numbers and commodity classifications which are from the Standard Industrial Classification (SIC) Manual and the Numerical List of Manufactured Products, 1972 Census of Manufactures.

U.S. firms should be aware that the listing in Commerce America *of opportunities to trade in specific commodities and technical data does not necessarily imply approval of their export by the Department of Commerce pursuant to the Export Administration Act of 1969. Applicable export licensing regulations must be followed.*

Every effort is made to include only traders with good reputations. However, the Department cannot be responsible for any trade relations.

WTDR indicates that a World Traders Data Report on this specific firm is available at $15 from the Export Information Division, Room 1313, U.S. Department of Commerce, Washington, D.C. 20230. A WTDR is a trade profile which contains commercial information including financial references, on an individual foreign firm. Orders must include complete name and address of the subject firm and be accompanied by payment. Further information concerning WTDRs and request forms are available at each Commerce District Office.

The mark (●) indicates that this trade opportunity is a request for bids by a foreign government agency.

Direct Sales

Coal

12110XX—SPAIN — Coking coal. Large firm operating as shipping agents & freight brokers, surveyors, agents for distribution of petroleum and solid fuels, transportation company, forwarding agents, etc. Operates throughout country, but mainly in ports of Gijon and Aviles in North. Has requirement of one million tons coking coal. Requests quotations f.o.b. Call or cable—Mr. Juan Diaz de Jove, Mgr., Paquet, Apartado N 90, Gijon (Oviedo). Telex 37372 and 37399; tel 985/350-400.

Highway & street construction

● **161XXXX—MALAYSIA**—The Government of Malaysia plans to invite tenders in mid-1976 from prequalified contractors for road improvement and construction of Crocker Range Crossing between Tamparuli and Renau, approximately 43 miles long. Prospective contractors must have had extensive experience in executing road construction in mountainous area, preferably in tropical countries. Work divided into two sections. Section I consists of packages 1 and 2 and Section II consists of only package 3. Construction expected to commence towards end of 1976 and estimated construction period for each package is from 3 to 4 years if 3 packages are combined in one contract. Contractors interested in receiving prequalification questionnaire and other relevant information forward request to Director, Highway Planning and Public Transport Unit, Ministry of Works and Transport, Jalan Tun Ismail, Kuala Lumpur 10-02. Responses to prequalification questionnaire to be submitted to above address by May 18, and copy to Messrs. Nippon Koei Co. Ltd., No. 1-11, Uchisaiwaicho 2-Chome, Chiyoda-Ku, Tokyo.

Heavy construction

● **16200—SYRIA**—Government is seeking firms interested in bidding on a telecommunications project for 130,000 telephone lines. No value stated. Bid bond is one percent of tender price and performance bond is five percent of contract price. Delay penalty is one Syrian pound per thousand daily. Financing is to come from pending IBRD Loan of $14 million. Conditions of project available from PTE's contracts department: Public Establishment of Telecommunications (PTE), Al-Jabri St., Damascus. Deadline for submittal, April 27.

Industrial chemicals

● **281XXXX, 284XXXX—IRAQ** — Chemical products for textile printing, dyeing, and finishing; 16 items. Tenderer must include pamphlets and complete specifications including 500 gm. samples of organic and inorganic chemicals, 20 kg. sample of resin finish reactant, and 5 kg. samples of each of four softeners. Tender number 8/76. Samples and quotation c.&f. Baghdad should reach Hilla, Iraq before April 20. Purchasing Department, Fine Textiles State Co., P.O. Box 2, Hilla, Iraq. Copy of tender documents and specifications obtainable from Chemicals and Rubber Program, Materials Division, OBRA/BDC, Room 2100, U.S. Department of Commerce, Washington, D.C. 20230, 202-967-3464. Review copy also available at U.S. Department of Commerce District Office, Federal Bldg., P.O. Box 36013, 450 Golden Gate Ave., San Francisco, Calif. 94102, 415-556-5868.

Agricultural chemicals

2879XXX—ARGENTINA — Municipality of Buenos Aires seeks rodenticides for rat eradication program. Contact Juan Carlos Morido, Purchasing Manager, Secretariat of Public Health, Buenos Aires Municipality, Coronel Diaz 2110, 1425 Buenos Aires.

● **287XXXX — BURMA** — 4,500 metric tons, muriate of potash, minimum 60-62 percent water soluble (K20); 30,000 metric tons, triple superphosphate, maximum 46-48 percent of (P_2O_5), minimum 45 percent water soluble phosphate (P_2O_5), 2 percent free phosphoric acid (P_2O_5), maximum 3 percent moisture. Delivery of muriate of potash in one consignment on/before July 15; triple superphosphate in four consignments on/before Aug. 1, Sept. 1, Oct. 1, and Nov. 1, 1976. Bidders required to quote payment: cash terms—f.o.b./f.a.s. as well as c. & f. liner terms or c. & f. freeout; credit terms—deferred payment 100 percent of invoice value, c. & f. liner terms or c. & f. freeout 90 days, 180 days, or 270 days deferred payment. Tender no. ARCP 75/76(7), bid deadline April. Bids should be forwarded to General Manager, Procurement and Distribution, Agricultural Corp., 50 Natmauk Rd., Rangoon. Tender documents and specifications available from Chemicals and Rubber Program, Materials Division, U.S. Department of Commerce, Washington, D.C. 20230, 202-967-5496.

● **287XXXX—MADAGASCAR** — Granular binary fertilizer (PK), 1,000 metric tons, minimum; 1,500 metric tons, maximum. Ratio P/K, between 1 and 2, 2 units of P_2O_5 to 1 unit of K20, 1 unit of P_2O_5 to 1 unit of K20. Amount in fertilizing units over 30 percent minimum. Solubility of P_2O_5 less than 25 percent soluble in water and more than 75 percent soluble in ammonium citrate. Form of potash (K20)—sulphate. Packed in gunny or weaved polypropylene bags, doubled on inside with polyethylene bag of 10/100 thickness, 50 kilograms net weight each. Tender no. not available, bid deadline April 30. Financed by World Bank Loan. Bid documents in French. Bid specifications available from Directorate General of Fanalamanga, Societe Fanalamanga, Immeuble Direction Des Eaux and Forets, Rue Rakotoson-Toto-Radona, Antsahavola, Boite Postale 4127, Tananarive. Price per copy is 25,000 FMG (approximately $110), airmail. Check should be sent by registered mail and made out in name of Fanalamanga.

Chemical products

● **2899XXX—IRAQ** — Fine Textile State Co. seeks offers on tender for chemicals for textile printing, dyeing and finishing. Closing date, April 20. Copies of tender documents and specifications available in Room 2104, U.S. Department of Commerce, Washington, D.C. 20230, 202-967-2239.

Rubber footwear

302120X—3149410—SWEDEN — Tennis shoes; shoes for boating. Estab. 1938; one of principal firms in its line of business & provides sales in Scandinavia, EFTA & EC countries. Medium size & employs 30. Stier known as very able & energetic businessman. According to local credit sources, co. financially sound & has met payments promptly. Recommended trade contact. Reply ASAP to — Kurt Stier, Mng. Dir., Handels & Fabriks AB Stiko, Germaniavagen 4, S-182 62 Djursholm. Cable: Stikostiko Djursholm; telex 11367-StikoS; tel 08/753 04 10 or 755 29 15.

Steel mill products

● **33100 — EGYPT** — Various sizes and quantities of galvanized flexible steel wire ropes. Tender No. and bid deadline not indicated. High Seas Fisheries Co., 53 Ave., El-Horreya, Alexandria. Details available at above address.

● **33100—ICELAND** — Various sizes and quantities of welded black steel pipes. Tender No. 76027/HVR; bid deadline April 23. Reykjavik Purchasing Center, Box 828, Frikirkjuvegi 3, Reykjavik. No tender documents but further details available from Iron and Steel Program, BDC, U.S. Department of Commerce, Washington, D.C. 20230. Telephone, 202-967-2438.

● **33100—SRI LANKA**—1,133 m.t. of bailing hoop, tensile strength 40/45 tons per sq. in. Tender No. T02/76/6; bid deadline April 20. Sri Lanka State Trading Corp., P.O. Box 1686, 119 Wekande Road, Colombo 2, Sri Lanka. Tender documents available at above address.

Nonferrous rolling & drawing

● **33500—HONDURAS**—1,800,000 ft. 1/0 ACSR cable; 700,000 ft. No. 2 ACSR cable; 250,000 ft. steel strand cable. 6,000 preformed armor rods for 1/0 ACSR: 5,000 preformed armor rods for No. 2 ADSR. 6,000 tie wires for 1/0 ACSR; 5,000 tie wires for No. ACSR. Tender No. E-V1-301; bid deadline April 22. Empresa Nacional de Energia Electrica. Aptdo. Postal No. 99, Tegucigalpa. Tender documents available at above address at 20 lempiras ($10).

Construction, mining, materials handling machinery, equipment

● **35300—INDIA**—Six flameproof electric underground load haul dumpers for use in coal mines. Tender no. CIL/C-1(A)/L-H DUMPER/IMP/573; bid deadline April 22. Deputy Controller of Purchase, Coal India Ltd., Purchase Department, 10 Netaji Subhas Road, Calcutta 700001. Bidders should purchase tender forms directly from Deputy Controller of Purchase at the above address at Rs. 20 ($2.26).

● **353XXXX — YUGOSLAVIA** — Equipment for production of metallurgical coke, capacity 700,000 tons per year. Tender No. SL-3/76-L1; bid deadline April 22. Sektor Investicija, "Oxris Kidric," Koksno-Hemijski Kombinat 74330 Lukavac. Bids should be sent to above address including detailed technological descriptions and specifications of equipment with weights: normal consumption of raw materials, energy and labor; itemized prices for engineering and equipment; estimate of value of construction and assembly work (according to supplier's local conditions); warranty on quality and functionality; deadline and successive terms of delivery, if any; conditions of payment; and reference list. Bids, together with all supplementary documentation, should be submitted in 6 copies.

Important Notice

Most member countries of the League of Arab States employ a secondary boycott against foreign firms which undertake certain specific types of business relationships with the State of Israel. The Commerce Department will not disseminate or make available for inspection any tenders or trade opportunity documents which contain conditions intended to support such boycotts, or which are based on documents known to contain such provisions. Trade or investment opportunities published herein are not presently known to be subject to such conditions. However, it is possible that U.S. firms responding to opportunities from Arab countries may be asked at some stage of a transaction to participate in an Arab boycott-related restrictive trade practice as defined in the Department's Export Administration Regulations (15 CFR, Part 369 et. seq.).

Firms are reminded that pursuant to Section 3(5) of the Export Administration Act of 1969, as amended, it is the policy of the United States (a) to oppose restrictive trade practices or boycotts fostered or imposed by foreign countries against other countries friendly to the United States, and (b) to encourage and request U.S. concerns engaged in the export of articles, materials, supplies, or information to refuse to take any action, including the furnishing of information or the signing of agreements, which has the effect of furthering or supporting such restrictive trade practices or boycotts. Accordingly, U.S. concerns receiving such requests to participate in a restrictive trade practice or boycott are encouraged and requested to refuse to comply with them.

Firms are further reminded that U.S. concerns receiving requests to participate in a restrictive trade practice or boycott must report such receipt to the Department of Commerce in accordance with Section 369.4 of the above-cited regulations.

Special industrial machinery

● **3559XXX—YUGOSLAVIA** — Plant to manufacture PVC powder. Bid deadline, April 22. Invest-Import, Terazije 5, 11000 Beograd, is seeking bids on behalf of "Worka-Sabac" chemical industry for production of 30,000 tons of S-PVC powder and 5,000 tons PVC granulate per year. Investor will favor bids offering best credit, price and delivery but will also consider state of art factors. Financing package should include supplier-arranged credits. Specifications as follows: Suspension polyvinylchloride powder: warehousing and pre-treatment of chemicals, capacity of warehouse on vinylchloride monomer 1,000 tons; polymerization: regeneration of vinylchloride monomer: drying of PVC, packaging and storing of PVC, capacity of silos 700 tons for five types of product: capacity of the line for enlarging and pelletization is ten tons per hour; energy equipment; control and maintenance; treatment of waste gases and solutions. Commercial specifications; bid should contain equipment specifications; description of process; schemes; drawings; literature; quality data (for five types with K values between 58-72); normal consumption of raw materials and energy fluids; data on emission of vinylchloride monomers into working environment; quality and type of waste liquids; degree of foreseen automation; prices (equipment, license, engineering); payment conditions; warranty; credit terms; parity; and delivery. Polyvinylchloride granulate; warehousing of raw materials and auxiliary chemicals; mixing in warm and cold blenders; extrusion and granulations; packaging and warehousing of granulate; capacity of silos 6x7 cubic meters; production of PVC granulate is foreseen in two lines of the same capacity: line one for hard granulate; line two for soft granulate (with 30 percent softener); with possibility of production of dry blend. Commercial specifications; description of the process; schemes; drawings; literature; prices; payment conditions; warranty; credit terms; parity; and delivery.

General industrial machinery

● **356XXXX—EGYPT** — Supply of two diesel pumping units for Rod El Farag Water Works. Tender number not specified; bid deadline May 3. Organization for Greater Cairo Water Supply, 42 Ramsis St., Cairo; P.O. Box 55, Cairo. Tender documents can be bought at above address for 5 Egyptian pounds or $11. Tenders must be accompanied with provisional deposit of 1 percent of total value of bid.

Electric transmission, distribution equipment

● **3613XXX — HONDURAS** — Empresa Nacional De Energia Electrica (ENEE), Departamento De Proveeduria, Tegucigalpa, D.C., Honduras, has issued tender No. D540/75 for supply of design, manu-

facture, testing and delivery of 8 circuit breakers, complete with appurtenances and specified spare parts. Bid deadline April 21. Copies of tender announcement and specifications available on short-term loan basis to firms located in U.S. from Science and Electronics Div., Room 1006, U.S. Dept. of Commerce, Washington, D.C. 20230, 202-967-5669.

Household appliances

3639961—GERMANY — Rug shampooer with rotating brushes. Must operate on 22 volts. West Berlin in medium-sized dept. store chain with annual turnover DM 30 million seeks import of above. Initial order of ca. 200 items. Quote c.i.f. W. Berlin if possible. Reply to—Herrn Alfandari, Fa. Jacobi Weissberg, Kaiserdamm 13, 1000 Berlin 19, Tel (030) 306 1016.

Communications equipment

• **366XXX—SOUTH AFRICA**—Railways Tender Board, P.O. Box 7784, Johannesburg 2000, has issued Tender No. 1080/71747 for supply of radio equipment, such as very high frequency base and mobile transceivers, VHF repeater station, remote control consoles, antennas, accessories, batteries and battery chargers. Bid deadline April 30. Tender documents available on short-term loan basis to companies located in U.S. from Science and Electronics Division, Room 1006, U.S. Department of Commerce, Washington, D.C. 20230, 202-967-5569.

• **3661XXX—COLOMBIA** — Direccion de Materiales, Ferrocarriles Nacionales, Estacion de la Sabana—Of. 307, Bogota, has issued tender No. BIRF 81A for supply of automatic telegraph switching central exchange with feeding equipment. Bid deadline April 21. Specifications available at above address for $30, not refundable. Financed by World Bank.

• **3661XXX—GREECE** — Hellenic Telecommunications Organization (OTE), Purchasing Dept., 6 Klissovis St., Athens, has issued tender No. 7167 for supply of material and equipment for 11 line-of-sight radio links and accessories. Bid deadline April 20. Copies of tender announcement and specifications available on short-term loan basis to firms located in U.S. from Science & Electronics Div., BDC-466, U.S. Dept. of Commerce, Washington, D.C. 20230, 202-967-5569.

• **3662XXX — BOLIVIA** — SAMAPA, Casilla 4439, La Paz, has issued tender No. 14/7.2-31/R/75 for supply of communications equipment consisting of 15 mobile transmission equipment VHF-FM; 9 stations consolette type. Bid deadline April 27. Specifications available from above address for $15 or on short-term loan basis to firms located in U.S. from Science & Electronics Div., Room 1006, U.S. Dept. of Commerce, Washington, D.C. 20230, 202-967-5569.

• **3662XXX—BURMA** — Posts and Telecommunications Corp., 125 Pansodan St., Rangoon, has issued tender No. 3 for supply of design, supply, install, test and put into service 3 multi-channel microwave radio relay systems, and provide associated equipment and services, etc. Bid deadline June 29. Specifications available from above address for $30.46 or on short-term loan-basis to firms located in U.S. from Science & Electronics Div., Room 1006, U.S. Dept. of Commerce, Washington, D.C. 20230, 202-967-5569.

• **3662XXX — UNITED ARAB EMIRATES** — Purchasing Section, Water & Electricity Dept., P.O. Box 219, Abu Dhabi, UAE, has issued tender No. WED-TI/PD/85-8/76 for supply and installation of VHF radio equipment. Bid deadline April 21. Tender documents available from above address for non-refundable fee of $25.50.

Railroad equipment

• **37400—SOUTH AFRICA**—South African Railways invites firms to bid for supply of 615 main line coaches and baggage vans, types C, D, E, K and KP. Tender No. 1020 71472. Tender documents available from Office of the Chief Stores Superintendent, Rm. 301, Empire State Bldg., 46 Plein St., Johannesburg, against payment of R150 per set (not refundable). Bid deadline May 14. Administration does not bind itself to accept lowest or any tender.

Engineering, laboratory, scientific research instruments

• **38110—INDIA**—Purchase Officer, Coal India Ltd., Purchase Department, 10 Netaji Subhas Road, Calcutta 700001, has issued tender no. CIL/C-1(A)/(R&D)/Seismograph/572 for blast siesmograph for conducting investigation regarding effect of vibration on surface structure. Bid deadline, April 19. Copies of tender announcement and specifications available from above address.

• **3811XXX — DOMINICAN REPUBLIC**—Secretaria de Estado de Educacion, Bellas Artes y Cultos Maxim Gomez, Santo Domingo, has issued tender for supply of laboratory equipment for 14 biology, chemistry, physics, and natural science labs and accessories. Bid deadline April 20. Documents available from above address for $50.

Instruments for measurement, analysis and control

• **3825XXX—INDIA** — Director General, Posts and Telegraphs (MMD Section), Parliament St., New Delhi 110001, has issued tender No. 12-131/75-MAD for supply of testing instruments for microwave/VHF sections of Telecommunication Research Center, New Delhi. Bid deadline May 10. Copies of tender announcement and specifications available on short-term loan basis to firms located in U.S. from Science & Electronics Div., Room 1006, U.S. Dept. of Commerce, Washington, D.C. 20230, 202-967-5569.

• **3825XXX—SINGAPORE** — Ngee Ann Technical College, 535 Clementi Rd., Singapore 21, has issued tender No. EEE/TQ/21-36-76, for teaching and laboratory equipment. Bid deadline April 27. Copies of tender announcement and specifications available on short-term loan basis to firms located in U.S. from Science & Electronics Div., Room 1006, U.S. Dept. of Commerce, Washington, D.C. 20230, 202-967-5569.

• **38250 — HONDURAS** — Empresa Nacional De Energia Electrica (ENEE), Departamento De Proveeduria, Tegucigalpa, D.C., has issued tender no. D-514/75 for 1400 watthour meters, single phase, socket connected, 60 cycles, 120/240 volts, and accessories. Bid deadline, April 29. Bid should offer tender financed with proceedings from Cabei loan to Government of Honduras. Copies of tender announcement and specifications available, or on short-term loan to firms located in U.S. from Science & Electronics Div., BDC-466, Room 1001, U.S. Department of Commerce, Washington, D.C. 20230, telephone 202-967-2939.

Surgical, medical, dental instruments

• **38410—MALTA** — Government Medical Stores of Republic of Malta, Valetta, has issued tender for supply of 12 infant incubators with accessories. Interested in receiving literature and prices. Copies of specifications available, or on short term loan to firms located in U.S. from Science & Electronics Div., BDC-466, Room 1001, U.S. Department of Commerce, Washington, D.C. 20230, telephone 202-967-2939.

Photographic equipment

• **3861XXX—SRI LANKA** — State Film Corp., P.O. Box 88, 224, Bauddhaloka Mawatha, Colombo 7, has issued tender No. ID/B/C/Tenders/3 for supply of 789,000 pieces projector carbons, positive and negative types of various sizes. Bid deadline April 20. Estimated purchase value $78.70. Copy of specifications available on short-term loan basis to firms located in U.S. from Science & Electronics Div., Room 1006, U.S. Department of Commerce, Washington, D.C. 20230, 202-967-5569.

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• **3861XXX—SYRIA** — Ministry of Defense, Political Administration, Damascus, has issued tenders Nos. 993, 994, and 995 for supply of cinema equipment as follows: Tender No. 993, various cameras with ancillaries and accessories; samples accepted until April 20. Tender No. 994, cinema developing machines for 16 and 35mm with ancillaries; samples accepted until April 24. Tender No. 995, various cinema projection machines with ancillaries; samples accepted until May 2. Book of conditions and specifications obtainable from Administration's Contracts Section.

Antique, secondhand stores

5931XXX — PAKISTAN — Second-hand clothing; all sorts (children, ladies, men). Quantity about 1,000 bales. Value approx. $50,000. Medium-size concern engaged in importing & indenting chemicals, paper bags & secondhand clothing. Wishes import for sale to others. Requests c. & f. Karachi quotations against L/C. Purchase decision will be based on competitive price & rapidity of delivery. Employs 10, incl. 4 in sales. Reply to Mohammad Saleem Omer, Partner, Shalimar Enterprises, 512 Mohammad I House, I.I. Chundrigar Rd., Karachi. Cable Aalishan Karachi; tel 239811 & 238411.

Misc. Retail Stores

5999XXX—JAPAN — Original pictures drawn by Impressionists in 18 & 19th centuries, such as Bonnard, Braque, Degas, Derain, Dongen, Dufy, Fujita, Kisling, Laurencin, Lautrec, Manet, Marquet, Matisse, Monet, Modigliani, Pascin, Pissarro, Renoir, Rouault, Segonaxac, Signac, Sisley, Soutine, Utrillo, Vlaminck; est. annual purchase $250,000. Operates art gallery & engages in import of Western art articles incl. pictures. Capital $40,000. 1975 sales $1.5 million. Ref. Sanwa Bank Head Office, Osaka. Reply to—Yoshitomo Takahata, Art Salon Takahata, 5-11 Fushimi-cho, Higashi-ku, Osaka 541. Tel: 06-227-1323.

Future Construction Abroad

IRAQ—Government would like to build a **railroad** linking the Mediterranean with Persian Gulf ports. Construction will consist of rail line from Baghdad to Haseba and spur between Al-kaem and phosphate deposits at Akashat in Northwestern Iraq. Line is to have initial annual freight capacity of 10 million tons. Will also carry passenger trains at speeds up to 250 km per hour. Contact Iraqi Railway Administration, Salhiyeh, Baghdad, for tender documents.

MOROCCO—Agency for Electric Power is seeking firms to construct, supply, install and put into operation a **thermo-electric generating station** at Mohammedia, 22 Km north of Casablanca. Plant will contain two 125 Mw thermo-electric units and will use fuel oil No. 2 as basic fuel. Will be financed by Moroccan Central Government Budget. Interested firms may obtain complete bidding file from: Monseiur Le Directeur General, Office National De L'Electricite (One), PB No. 498, Casablanca. Cost for documentation is DH 1725 (Approx. $406) plus postage. Correspondence preferred in French and deadline will not be postponed beyond Sept. 25. OPIC.

The Overseas Private Investment Corp. (OPIC) offers political risk insurance to U.S. construction firms planning to submit bids on projects in certain developing countries, identified by the "OPIC" notation at the end of some items. For further information on OPIC's construction insurance program, write Information Officer, Overseas Private Investment Corp., Washington, D.C. 20527. Tel: 202-632-1854.

TUNISIA—Expects to build $10 million **hydroelectric power plant** of 30 Mw capacity at Sisi Salem (near Testour) 50 miles west of Tunis. Tender calls for supply, transport, installation and start-up of generating equipment as well as construction. Part of multi-purpose Sidi Salem Dam project. Financing being sought from IBRD, Iran and other countries. Tender documents can be purchased for 100 Tunisian Dinars (1 TD= $2.50) from STEG. Address is: Mr. Sadok Bahroun, President Director General, Societe Tunisienne De L'Electricite Et Du Gas (STEG), 38 Rue Kamel Ataturk, Tunis. Telex: 12020 Tunis; Cable: Gazelec, Tunis: Telephone: 243,522. Deadline for receipt June 16. OPIC.

GREECE—Firms interested in designing, installing and operating **cableway** connecting Loutraki with the summit of Gerania mountain are invited to submit proposals to Mr. P. Protopappas, Mayor, Muncipality of Loutraki-Perahora, Loutraki, Greece by May 12. No terms of reference available but preliminary reports may be consulted at Municipality's offices. OPIC.

THAILAND — Chavalit Thangsamphan, Managing Director, Chavalit Hotel, is forming a new firm, South Beach Co. It will have registered capital of $4 million and will invest about $20 million (to be financed locally) to build a 17-story, 432-room **deluxe hotel** at Cha Am Bay, Prachuap Khiri Khan province, a sea resort approx. 200 kilometers southwest of Bangkok. Hotel will provide color TV set in every room and direct telephone link to Bangkok. After hotel completion, recreation facilities (including golf course), zoo, bungalows and private houses will be built in adjacent 40-acre area. In addition to above project, Mr. Thangsamphan has decided to expand his Ambassador Hotel in Bangkok. Expansion, to cost about $15 million (also to be financed locally), will add a new wing of 25 stories containing 300 rooms to present six-story building. Mr. Thangsamphan hopes to begin these projects in 1976, and interested consultants and suppliers of hotel equipment are invited to send proposals to him as soon as possible at: Mr. Chavalit Thangsamphan, Chavalit Hotel, Sukhumvit Rd., Bangkok. OPIC.

REUNION—The island of Reunion in the Indian Ocean (pop. 440,000), an overseas Department of France, annually produces 200-240,000 tons of refined sugar. Production in 1975 was 204,000 metric tons. The six sugar mills on Reunion have no immediate plans for expansion or major replacement of equipment. However, the industry in general is gradually modernizing and mechanizing in production and harvesting of sugar cane. **Opportunities exist for sale of broad range of sugar industry equipment and supplies,** ranging from irrigation equipment and sugar industry chemicals to mechanized cane harvesting equipment. U.S. manufacturers and suppliers of products for the cane sugar industry who have not explored opportunities for sale of their products in Reunion are encouraged to write to Sugar Industry Association of Reunion at: M. Louis Mace, Secretaire General des Fabricants du Sucre, B.P. 57, St. Denis, Reunion (France). As the island of Reunion is legally a part of France, customs duties are the same as for France. There are no problems of import licensing restrictions or availability of foreign exchange.

SUDAN — African Development Bank (ADB) is seriously studying participation in **three related agri-business projects** in Sudan: 1) poultry scheme to produce one million broilers and 24 million eggs per annum in a closed environment; 2) dairy involving, as producers of milk, some 1,200 farmers in northern end of Gezira agricultural scheme; 3) feed mill to supply poultry and dairy projects as well as general market. No further details available, but interested parties can write to: Dr. Ali Hassan, Managing Director, Animal Production Corp., P.O. Box 624, Khartoum.

Visiting Buyers and Officials

SWEDEN—Lars-Gunnar Anderson, Managing Director of Ingenjorsfirman Hallenborg and Anderson AB, FAC, S-421 20 Vastra Frolunda, Sweden, is tentatively planning to be in Los Angeles for two weeks beginning March 26. He is interested in obtaining **agencies for materials handling systems and components, preferably miniaturized, miniature hydraulics systems and components, and industrial control systems.** U.S. address will be c/o Mr. L. Anderson, 712 Molabak Dr., Corona del Mar, Calif. 92625. Interested parties may also contact Terry Rettig, U.S. Department of Commerce, Room 2322, Washington, D.C. 20230, 202-967-3265.

PAKISTAN — Iqbal Ashrof, Proprietor, Starlite Co., 77 Circular Rd., Lahore (cable: Pakdiary, Lahore. Tel: 54028) will be in New York beginning April 6. He is interested in buying **plastic sheets and artificial leather,** running lengths as well as job lots for the manufacture of file and diary covers, ladies handbags, etc. Contact address in U.S. is c/o Dr. Mirza Maqbool Ashraf, 889 W. Street Rd., Carthage, N.Y. 13619. Interested parties may also contact Terry Rettig, address above.

SWEDEN—Lars Polmquist, Director, G & L Beijer AS, Box 325, S-201, 23 Malmo 1, is tentatively planning to visit New York in early April. He is seeking **equipment and supplies for the steel and petrochemical industries,** especially insulation materials. For further information contact Terry Rettig, address above.

AUSTRALIA—Anthony C. Dwyer, Gen-

eral Manager, Dorf Industries Pty. Ltd., will be visiting U.S. May 3-14 to contact manufacturers of **faucets, showers and fittings.** Dwyer is interested in import and also in manufacturing in Australia under license. Dorf Industries is largest Australian manufacturer of these products. Interested manufacturers contact Paulette Wolfson, U.S. Department of Commerce, Room 2322, Washington, D.C. 20230, 202-967-3265.

Representations

Foreign private firms are interested in agency agreements and/or distributorships for these products.

Miscellaneous nonmetallic minerals, except fuels

1499XXX—BRAZIL — Asbestos — Canadian standard types 3F, K, 3R, 3T, 3Z, 4A, 4J, 4S, 5M, 5R, 5D. Consult firm regarding min. guaranteed test specs. Reply ASAP to—Manoel Rodrigues Barbosa Neto, Mgr., Leandro Gabriel S/C Ltda., C.P. 940, Av. Franco Glicerio 1046, Sala 25, 13100 Campinas (SP), Brazil. Cable KATH; Tel 0192/27980.

Wood products

2499582 — DENMARK — Wooden pails, wooden dippers. Small, well-reputed co. specializing in supplying prefabricated sauna bath units. Interested in adding complementary lines to sales program. Reply ASAP to—William Hempel, Mgr., Era-Sauna, 6-9 Poppelgaardsvej, DK-2860 Soborg. Tel 01-694033.

Heating apparatus, plumbing fixtures

3433785—GERMANY — Oil burner jets from 0.5 gal/hr. to 50 gal/hr. Jets for steam and water atomizers, all sizes. Jets for industrial oil burners with capacity up to 2,000 KG/hr. Pumps for oil burners with capacity up to 50 gal/hr. Well estab. in oil heating industry. Annual sales amount to DM 2 million. Financial ref: Deutsche Bank AG, 56 Wuppertal. Reply ASAP to—Mr. M. Reichstein, Manfred Reichstein Gmbh & Co KG, McTallfabrik & Handelsgesellschaft, Postfach 120539, 56 Wuppertal 12. Tel: 0202/470090, Tx: 08591172.

Metalworking machinery

3546135—FRANCE — Tools for aircraft industry. Estab. 1972. Employs 50. Mfr. of bolts, nuts, screws & rivets for aviation industry. Bank ref: Banque Varin Bernier in Paris. Good reputation. Would be interested in licensing agreement. WTDR 12/75. Reply ASAP to—Mr. Lievens, Mgr., Aerotechnic, 17 Rue de Prony, 92600 Asnieres. Phone 733-5980.

Special industrial machinery

355955X — ITALY — Glass-making machinery & equip. Agent for machinery & equip. for chemical, glass & paper industries. Has 4 employees & enjoys good reputation. Reply ASAP to — Alberto Savare, Owner, Dr. Ing. Alberto Savare—Impianti Industriali, Via Vincenzo Monti 12, 20123 Milan. Cable: Savarimpianti Milan; tel 02/875009.

3559589—UNITED KINGDOM — Pharmaceutical machinery. Acts as suppliers of specialized machinery for pharmaceutical & food industries. Interested in any equip. in these fields to supplement their existing range. Represents 2 U.S. firms. Reply to: B. D. Strutt, Mng. Dir., Bernard Strutt Agencies Ltd., 6 Station Rd., Stoke D'Abernon, Cobham KT 11 3BN, U.K. Telephone, 266-4451.

Communications equipment

3662624—GERMANY — Ultrasonic welders & other new welding techniques except standard technique for resistance welding & arc welding. Very large mfr. of food packaging & wrapping machinery, metalworking machinery & equip., various types of cylinders for high and low pressure, industrial process furnaces & dryers & various tyes of textile machinery. Est. sales potential $1.2 million for these U.S. products. Founded in 1872. Lists annual sales at DM 651 million. Requests price quotation c.i.f. Bremerhaven. Terms of payment L/C. Able maintain repair service & well managed & known for prompt settlement of financial obligations. Well known to Consulate General & highly recommended as possible trade contact. Reply to—Herr Hansjoachim Sauer, Industrie-Werke Karlsruhe Augsburg AG, Gartenstrasse 711, D-7500 Karlsruhe 1. Cable: Iweka Karlsruhe; Telex 7-826-951; phone 0721/143020.

3662681 — SWITZERLAND — Wireless operated & control garage door openers (transmitter in car, receiver in garage). Only interested in sender, receiver & related control. Reply to—Mr. F. Schuetz, Geissmann & Schuetz Co., P.O. Box 107, 5610 Wohlen, tel 057/74 99 1.

Measuring & controlling devices Nonferrous drawing & rolling

3824411 — ITALY — Speedometers for motor vehicles. Rep. of motor vehicle parts & accessories. Has 10 employees & invoiced sales of about $2.7 million. Enjoys good reputation. Reply to: Armando Rillosi, Sales Mgr., A.G. Ofira, Via Monte Cencio 46, 25100 Brescia. Telephone 030/306707.

Scrap & waste materials

50930XX—ITALY — Iron, steel & nonferrous metal scrap. Importer & exporter of minerals, chemical products, coal, metals, ferro-alloys & scrap. Has 15 employees & invoiced sales of about $330,000. Enjoys good reputation. Reply to—Charles Haim, Mng. Dir., C.O.C. Italia, S.p.A., Via Nerino 2, 20123 Milan. Cable Cominco Milan; tel 02/861241.

50930XX—THAILAND — Scrap, iron & steel. Progressive trading co. dealing in chemicals & fertilizers. Has 200 employees & 45 salesmen. Considered suitable trade contact for U.S. suppliers. WTDR 8/75. Reply to—Charan Rungkietsakul, Metro Co., Ltd., P.O. Box 362, Bangkok. Cable: Metroco; tel 211161; 224528.

Motion picture production, distribution

7813XXX — AUSTRALIA — Excl. agent/distributor for TV program aids, educational film, cassette libraries, radio programs. Anxious to diversify product line. Firm covers Australia. Reply to—J. M. Woodward, Mgr., Grace Gibson Radio Productions Pty. Ltd., ADC House, 77 Pacific Highway, North Sydney, N.S.W. 2060. Cable: Gragibson; tel: 922 5533.

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After that date, the "967" prefix will be replaced by "377".